Facility Support Services

Environmental & Safety/Health Consulting

Self-Implementing On-Site PCB Cleanup and Disposal Plan



ORIGINAL

Student Center/Alumni Hall Quinnipiac University

Prepared for: Quinnipiac University 275 Mount Carmel Avenue Hamden, CT 06518

Prepared by: Facility Support Services, LLC 2685 State Street Hamden, CT 06517

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Student Center/Alumni Hall Quinnipiac University, Hamden, Connecticut

Self Implementing On Site Cleanup and Disposal Plan for PCB Caulking Removal Amendment I

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Self Implementing On Site Cleanup and Disposal Plan Amended Pages 2, 9, 11 & 12

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Introduction I.

This plan has been prepared by Facility Support Services, LLC (FSS) on behalf of Quinnipiac University, located at 275 Mount Carmel Avenue in Hamden, Connecticut for the removal of PCB materials as part of a planned renovation of an existing building. The plan has been prepared to comply with the U.S. Environmental Protection Agency (USEPA) requirements for notification of a Self-Implementing On-Site Cleanup and Disposal Plan (SIDP) in accordance with 40 CFR Part 761.61 (a)(3). Exterior and interior caulking and glazing compounds associated with existing window systems, exterior caulking associated with existing door systems, and exterior and interior caulking associated with building expansion joints have been determined to contain polychlorinated biphenyls (PCB) above regulated concentrations at the existing Student Center/Alumni Hall located at Quinnipiac University, 275 Mount Carmel Avenue in Hamden, Connecticut. The locations where regulated PCB materials are present will require removal as part of the first phase of renovation of a portion of the existing building. The renovation area to be covered by this SIDP is shown on Figures 1a & 1b as the "Phase I" area, The Phase II area will be renovated at a later date with PCB building materials being managed under a separate SIDP if necessary. (It should be noted that the Phase II portion of the renovation will be undertaken primarily in an area of the building completed in 1990.)

Background 1.1

The Site is the Quinnipiac University Student Center/Alumni Hall, a two story structure that was originally constructed in 1966 with an addition completed in 1990. The building structure includes concrete slab on grade with steel truss roof joists supported by structural concrete block and steel lally columns. The exterior of the building is brick veneer. Window systems are metal and exterior door systems are metal.

1.2 Project

This SIDP is for the removal of manufactured products containing PCBs at concentrations of equal to or greater than 50 parts per million (mg/kg) PCB (e.g., various caulking materials) as PCB Bulk Product Waste, and the removal of adjacent substrate materials that have been impacted by the PCB-containing products as PCB Bulk Remediation Waste (e.g., PCB contaminated brick, concrete block, asphalt, and soil). Steel structural components to remain such as window lintels shall be cleaned to meet required visual standards and wipe sampling criteria for high occupancy use. High occupancy areas are those areas where the occupancy for any individual not wearing dermal or respiratory protection is equal to or more than 335 hours per calendar year (an average equal to or more than 6.7 hours per week). Low occupancy areas are defined as those areas where the occupancy for any individual not wearing dermal or respiratory protection is less than 335 hours per calendar year (an average of less than 6.7 hours per week).

PCB Bulk Product materials containing PCBs equal to or greater than (\geq) 50 mg/kg include exterior and interior caulking and glazing compounds associated with existing window systems, exterior caulking associated with existing door systems, and exterior and interior caulking associated with building expansion joints. Adjacent porous substrate materials that have been shown to have a PCB concentration of \geq 1 mg/kg, including PCB contaminated brick, concrete block and asphalt, will be removed and disposed of as Porous Surfaces, PCB Bulk Remediation Waste.

Soil and gravel beneath and impacted by PCB-containing caulking/glazing materials (≥ 50 mg/kg PCB) adjacent to the west and north sides of the building have been determined to contain PCB at levels ≥1 mg/kg and will be removed as Bulk PCB Remediation Waste.

In accordance with State of Connecticut statutes, caulking or other building materials containing PCBs <50 mg/kg but ≥ 1 mg/kg are regulated and may require remediation. These materials include roofing tar, roofing caulk, window caulk, window glazing and door caulk, which are products that were used in the original 1966 portion of the subject structure and meet the definition of "excluded products" as defined in 40 CFR part 761.3. According to Quinnipiac University, these products were manufactured in or prior to 1966 and installed during the original construction, and the PCB concentrations detected are not the result of dilution. An additional scope of work is included in Section 3.2.4 for removal of caulking and other construction materials containing PCB concentrations of <50 mg/kg, along with the removal of adjacent material impacted by PCBs, in accordance with the requirements for high occupancy use (< 1 mg/kg).

The objective of the project is to remove PCB caulking/glazing containing PCBs \geq 50 mg/kg as PCB Bulk Product Waste. Adjacent porous surfaces and soil and gravel containing PCBs shall be removed as Bulk PCB Remediation Waste to meet the unrestricted use clean-up standard of \leq 1 mg/kg PCB for high occupancy use structures including the following surfaces to remain; porous concrete, porous brick veneer, porous concrete block, asphalt gravel and soil. Non-porous surfaces shall be cleaned to a standard of \leq 10 ug/100 cm² or disposed of as PCB Remediation waste. The overall project objective is to remove PCB materials to facilitate renovation of a portion of the building in accordance with proposed construction plans for high occupancy use upon completing the PCB SIDP work.

Plan Organization 1.3

This SIDP has been organized into the following sections:

Section 2: Site Characterization

The site characterization section provides a summary of the sampling performed to delineate the nature and extent of PCB as required in accordance with 40 CFR Part 761.61 (a)(2), (3)(A-C). The section includes the nature of the contamination including kinds of materials, a summary of the procedures used to sample contaminated and adjacent surfaces, and the location and extent of the identified contaminated areas.

Section 3: Remediation Plan

The remediation plan includes a discussion of how the remedial objectives identified in Section 1.2 shall be met and the remediation approach, cleanup levels to be met and the verification sampling approach to be utilized. This section includes diagrams depicting the areas of proposed remediation work and location for post-remediation verification sampling. The remediation plan is submitted in accordance with 40 CFR Part 761.61 (a)(3)(D).

Section 4: Schedule and Certification

The proposed schedule for implementation and reporting will be provided. This section includes the written certification signed by the Owner of the property and other parties responsible for the remediation, cleanup and disposal in accordance with 40 CFR 761.61 (a)(3)(E).

II. Site Characterization

This section provides a summary of the sampling performed to delineate the nature and extent of PCB as required in accordance with 40 CFR Part 761.61 (a)(2), (3) (A-C). The section includes the nature of the impacted materials; a summary of the procedures used to sample the materials; and the location and extent of the identified contaminated areas.

The following sections describe the selection of sample locations, sample collection methods, and the results of the characterization data. The initial site characterization of source materials, such as caulking materials, and testing of adjacent surfaces to facilitate development of this SIDP were performed by Facility Support Services, LLC (FSS) of Hamden, Connecticut.

Development of the SIDP was also performed by FSS of Hamden, Connecticut. Figures depicting the locations of bulk product samples collected by FSS are included in Figures 1a, 1b, and 1c.

2.1 Sample Collection and Analysis

PHASE 1- SOURCE MATERIAL SAMPLING

Potential PCB Bulk Product Source Materials identified for the Site included roof, window, door and building expansion joint caulking, window glazing, wood veneer glue dobs, roofing tar, and paint. Sampling of source materials was conducted by FSS representatives Christopher Hudacek and Steven Daniels. The sampling was performed on the following eight days: July 5, 2010; August 13, 2010; August 27, 2010; October 4, 2010; October 8, 2010; October 11, 2010; October 12, 2010; and October 30, 2010.

See Attachment A for Photo Documentation of source materials collected.

Bulk Product Sampling

At least three (3) samples of each potential PCB bulk product type were collected. Sampling involved removal of bulk product materials (source materials) using hand tools to submit in bulk form to determine PCB content. Steel chisels were utilized to collect caulk, glazing, glue and paint bulk product samples. The chisels were decontaminated between sample points using a wash with a laboratory grade detergent solution (Alconox), clean water rinse, a hexane wipe down and final deionized water rinse between sampling. Each sample was placed in containers, labeled, and delivered to Spectrum Analytical, Inc. located in Agawam, Massachusetts and Complete Environmental Testing located in Stratford, Connecticut using proper chain of custody. The analytical method extractions utilized were method 3540C (Soxhlet Extraction) and method SW846 8082.

See Figures 1a, 1b, and 1c for drawings identifying bulk product sample locations. See Table 1 for summary of bulk materials and PCB concentration laboratory analytical results.

In addition, On October 30, 2010 a field trial was conducted to attempt to collect separate layers of paint on wall surfaces. Paint was removed from two painted interior concrete block walls that are scheduled for removal as part of the building renovation project. One area was located at the interior south wall of Alumni Hall and the other area was located at the north interior wall of Room 117 on the first floor of the Student Center building. Paint removal methods that were utilized for the trial included hand sanding, heat gun application and peeling with a steel chisel and by use of a steel chisel only.

None of the above methods were successful in the separation of distinct paint layers. No separation of paint layers was able to be completed using the chisel or heat gun removal methods. The removal of paint by hand sanding did reveal several layers of paint at each location but due to the uneven porous surface of the concrete the surface layer of paint was found to remain in pores and crevices while other areas were sanded to bare concrete with no distinct layer being removed at any time during the sanding. (See Attachment B for Photo Documentation of the paint removal trial.)

PHASE 2 – ADJACENT SURFACE SAMPLING

Sampling of materials adjacent to confirmed PCB products (both PCB Bulk Products (≥ 50 mg/kg PCB) and Connecticut regulated PCB containing products (< 50 mg/kg PCB), including brick, concrete, wood, asphalt, soil and gravel, was conducted by FSS representatives Christopher Hudacek and Steven Daniels. The sampling was performed on the following ten days: August 13, 2010; August 26, 2010; August 27, 2010; August 28, 2010; September 12, 2010; September 26, 2010; October 4, 2010; October 11, 2010; October 12, 2010; and November 18, 2010.

Each sample was placed in containers, labeled, and delivered to Spectrum Analytical, Inc. located in Agawam, Massachusetts and Complete Environmental Testing located in Stratford Connecticut using proper chain of custody. The analytical method extractions utilized were method 3540C (Soxhlet Extraction) and method SW846 8082.

Porous Adjacent Materials

Sampling of wood, brick, and concrete substrate materials in direct contact with PCB Bulk Product and Connecticut regulated PCB containing products was conducted in accordance with EPA "Draft Standard Operating Procedure for Sampling Concrete in the Field" (dated December 30, 1997). Sampling first involved the complete removal of bulk product materials (source materials) at sampling locations using a steel chisel. Intent was to ensure complete removal of source materials prior to sampling adjacent surfaces. Once removal of all visible source material was performed, the porous surfaces were cleaned using Capsur as a cleaning product with a wire brush and the surface was rinsed with distilled water. The adjacent brick and concrete porous surfaces were sampled at approximate 0.5-inch to 1-inch intervals at increasing distance from the PCB product contact surface until a PCB concentration of < 1 mg/kg was indicated by laboratory analysis.

The adjacent wood windowsill materials were sampled by chipping away a surface sample to a penetration approximately 0.5-inches from directly below PCB Bulk product caulk. No further sampling of wood window sills were collected as it is more cost effective to remove the entire window sill piece as Bulk PCB Remediation Waste if results indicate PCB concentrations ≥1 mg/kg.

Brick and concrete samples collected on August 13, 26, 27 and 28, September 12 and 26, and October 4 porous substrate materials were obtained using a steel chisel where possible based on material matrix. Brick and concrete porous substrate material samples collected on October 11 and 12 and November 18 were obtained using a hammer drill fitted with a 1/2-inch diameter steel drill bit. In addition, prior to collecting samples of painted substrate materials on October 11 and 12 and November 18, the paint was removed as previous source material analysis indicated that PCBs may be present in the paint.

The porous materials were analyzed for PCB content from each cross section. Tools utilized to collect samples were decontaminated between sample points using a wash with a laboratory grade detergent solution (Alconox), clean water rinse, a hexane wipe down and final de-ionized water rinse between sampling.

Additionally, samples of horizontal asphalt below exterior window caulking/glazing and exterior building expansion joint caulking found to contain PCB concentration ≥ 50 mg/kg were collected. The asphalt was sampled using a steel chisel to obtain samples out laterally from the source materials generally from 0 to 0.5 inches, 1 to 2.0 inches, and 2.0 to 4.0 inches until a PCB concentration of < 1 mg/kg was indicated by laboratory analysis. The asphalt materials were analyzed for PCB content from each cross section.

See Figures 2a and 2b for drawings identifying locations of collected brick, concrete and wood samples. See to Figures 2c, 2c.1, 2c.2 and 2c.3 for the drawings identifying locations of collected asphalt samples. See Table 2 for summary of porous substrate materials and PCB concentration laboratory analytical results.

See Attachment C for Photo Documentation of porous materials collected.

Soil and Gravel Sampling

Soil and gravel samples were collected below each type of exterior caulking/glazing found to contain PCB concentrations ≥ 50 mg/kg. The sampling was performed on the following seven days: August 13, 2010; August 26, 2010; August 28, 2010; September 12, 2010; September 26, 2010; October 4, 2010; and October 12, 2010.

Exposed bare soils beneath PCB Bulk Product Caulking were limited to a 1-inch to 2inch wide strip between the building footer wall and a 2-inch thick layer of asphalt which extends out from the building. Soil samples were collected beneath caulk joints on the west and north sides of the building. For the north and west side, soil samples were collected from directly beneath the caulk joints at four locations generally at 2-inch to 4-inch vertical intervals down to 18 inches below grade until a PCB concentration of < 1 mg/kg was indicated by laboratory analysis (one remained at 1.1 ppm.) FSS also collected additional soil samples at two caulk joints on the west side of the building with soil samples collected from directly beneath the asphalt layer to a depth of 3 to 6-inches at points offset one foot to either side of the caulk joint and one sample collected one foot out from the wall in front of the caulk joint. An additional set of three one foot offset samples were collected at the base of the foundation wall where no caulk joint was present. None of the offset samples showed any detection of PCBs.

The bulk materials were analyzed for PCB content from each cross section.

Tools utilized to collect samples were decontaminated between sample points using a wash with a laboratory grade detergent solution (Alconox), clean water rinse, a hexane wipe down and final de-ionized water rinse between sampling.

See Figures 3, 3a and 3b for the drawings identifying locations of collected soil and gravel samples. See Table 3 for summary of bulk soil and gravel materials and PCB concentration laboratory analytical results.

See Attachment D for Photo Documentation of soil and gravel samples collected.

Sample Analysis Results 2.2

The analytical methods for analysis of PCB concentrations included extraction method 3540C (Soxhlet Extraction) and analysis method SW846 8082. laboratory results and chain of custody are included in Appendix I. Refer to Tables 1-3 for Summary of Analytical Results for a listing of specific sampling locations of collected samples and results of PCB analysis.

Source Material Sample Analysis Results 2.2.1

The analysis results of all collected potential source materials are summarized in Table 1. Note: Results in bold contain PCBs at 50 mg/kg or greater.

Analytical results indicate several samples as containing PCB ≥ 50 mg/kg associated with the structure, including window, door and building expansion joint caulking and window glazing indicating that these materials would be considered as PCB Bulk Products. In addition, several materials, including caulking, roofing tar, paint and glue, were reported to contain PCBs at concentrations between ≥ 1 mg/kg and 50 mg/kg indicating that these materials would be State of Connecticut regulated PCB containing products.

Although no paint sample that was analyzed indicated a PCB concentration ≥ 50 mg/kg, Quinnipiac University has elected to handle the painted surfaces that will be removed along with the concrete block wall substrate as PCB Bulk Product waste, due to the inability to separate layers of paint to distinguish a specific source product.

Analytical results of a sample of window caulk collected from Room 211 of the Student Center building on July 5, 2010 indicated a PCB concentration of 1.3 mg/kg. This result was not expected as the sample was collected from a part of the building constructed in 1990. Given the age of this portion of the building, no PCBs should have been present in the caulk. Accordingly, a second sample was collected on August 13, 2010. The analytical results confirmed that no PCBs were detected. We suspect that, notwithstanding the use of the above-described decontamination procedures, the initial detection of a low PCB level may have been due to cross-contamination of the sampling tools used.

Laboratory analysis results and chain of custody are included in Appendix I for source materials.

2.2.2 Adjacent Porous Materials Sample Analysis Results

The analysis results of adjacent porous materials are summarized in Table 2. Note results in bold contain PCBs at greater than 1 mg/kg.

The results indicate the presence of PCB \geq 1 mg/kg for samples of adjacent porous surfaces including asphalt, brick, concrete and wood.

Samples that were collected for brick substrate materials indicated penetrations of PCBs in concentrations ≥ 1 mg/kg of up to 7.5-inches. It should be noted that only one brick substrate sample collected from beneath an interior PCB Bulk Product caulk joint (Sample ID 325010091213) indicated a PCB concentration ≥ 1 mg/kg of up to 7.5-inches. For the remaining samples no PCB concentrations ≥ 1 mg/kg were indicated beyond a penetration of 4.5 inches.

Samples that were collected for concrete substrate materials indicated penetrations of PCBs in concentrations ≥ 1 mg/kg of up to 2.5-inches for those samples that were collected after potential PCB containing paint was removed prior to sampling.

For asphalt samples, no PCB concentration ≥ 1 mg/kg was reported for samples collected greater than 6 inches out from a PCB Bulk Product caulk joint.

Laboratory analytical results and chain of custody are included in Appendix I for adjacent porous material bulk samples.

2.2.3 Adjacent Non-Porous Materials Sample Analysis Results

No samples were collected of non-porous materials such as steel lintels. The project approach shall be to presume that the surfaces that are in contact with source materials containing PCBs ≥ 50 mg/kg are contaminated at concentrations exceeding the standard of ≤ 10 ug/100 cm².

Adjacent Soil and Gravel Sample Analysis Results 2.2.4

The analytical results of adjacent soil and gravel materials are summarized in Table 3. Note results in bold contain PCBs at greater than 1 mg/kg.

The analytical results of soil samples collected from the north side of the Alumni Hall building indicated that PCB concentrations of ≥ 1 mg/kg do not extend below 8 inches.

The analytical results of soil samples collected from the west side of the Alumni Hall building indicated that PCB concentrations of ≥ 1 mg/kg do not substantially extend below 18 inches. One sample (S4) indicated a PCB concentration of 1.1 mg/kg at a depth of 16-18 inches.

Analytical results also indicated that PCB concentrations were reported as Not Detected for all soil samples collected at lateral distances of 1 foot from a PCB Bulk Product caulk joint for surface samples collected immediately below asphalt paving.

III. Remediation Plan

The work described in this SIDP shall meet the objectives identified in section 1.2 Project Objectives in accordance with 40 CFR Part 761. The remediation work shall be performed to ensure compliance with EPA Toxic Substance Control Act (TSCA) requirements and protect both public health and the environment. Materials classified as PCB Bulk Product Waste and Bulk PCB Remediation Waste shall be properly managed and disposed of in compliance with federal and state regulatory requirements.

The proposed abatement activities to be performed by the Remediation Contractor shall include the following:

- 1. Site preparation and controls to facilitate remediation of PCBs.
- Health and Safety compliance in accordance with Occupational Safety and Health Administration (OSHA) requirements.
- Recordkeeping and distribution as required in accordance with 40 CFR part 761.125 (c) (5).

PCB ABATEMENT REQUIREMENTS

PCB Bulk Product Waste Removal

- PCB-01 Remove existing exterior window caulking at jamb, lintel and sill locations from sill to head at all masonry openings for disposal as PCB Bulk Product Waste.
- PCB-02 Remove existing window sashes with exterior glazing and dispose of entire sash as PCB Bulk Product Waste. (All window sashes are metal).
- PCB-03 Remove existing interior caulking at jamb, lintel and sill locations from sill to head at all window masonry openings for disposal as PCB Bulk Product Waste.
- PCB-04 Remove existing window sashes with interior glazing and dispose of entire sash as PCB Bulk Product Waste. (All window sashes are metal)
- PCB-05 Remove existing exterior door caulking at jamb and lintel locations at all masonry openings for disposal as PCB Bulk Product Waste.
- PCB-06 Remove existing interior/exterior building joint caulking at expansion joint locations for disposal as PCB Bulk Product Waste.

PCB Remediation Waste Removal

- Remove existing painted concrete block for all locations where a wall will PCB-07 be demolished for disposal as Bulk PCB Remediation Waste ≥ 50 mg/kg. (Note: The paint has been determined to have a PCB concentration < 50 mg/kg; however, the block to be removed will be managed as Bulk PCB Remediation Waste ≥ 50 mg/kg for logistical reasons.)
- For walls to remain, remove existing interior porous concrete blocks at PCB-08 building expansion joints and window masonry opening jambs from sill to head from window opening. Individual blocks shall be removed in their entirety from location of caulk joint for disposal as Bulk PCB Remediation Waste ≥ 50 mg/kg.
- For walls to remain, remove existing interior and exterior brick veneer at PCB-09 building expansion joints and window and door masonry opening jambs from sill to head at least 8.0 inches from opening. Brick shall be removed in a vertical line at closest vertical mortar joint cutting whole bricks as necessary and removed in their entirety from location of caulk joint for disposal as Bulk PCB Remediation Waste ≥ 50 mg/kg.
- Remove entire existing wood windowsills adjacent to PCB Bulk Product PCB-10 caulk joints for disposal as Bulk PCB Remediation Waste ≥ 50 mg/kg.
- Remove PCB contaminated asphalt paving from designated locations to PCB-11 full depth of material for disposal as Bulk PCB Remediation Waste ≥ 50 mg/kg out to at least 2 feet from source materials.
- Remove PCB contaminated soil and gravel from beneath source locations PCB-12 to depths of at least 2.0 feet below grade and out at least 2.0 feet laterally beyond each source location for disposal as Bulk PCB Remediation Waste >50 mg/kg.

The Remediation Contractor shall dispose of Bulk Product and Bulk PCB Remediation Waste ≥ 50 mg/kg at the Chemical Waste Management, Model City New York landfill an approved TSCA chemical waste landfill.

Connecticut Regulated Materials

All building materials with the exception of the paint, including roofing tar, roofing caulk, window caulk, window glazing and door caulk, which were indicated to possess concentrations of PCB ≥ 1 mg/kg but less than 50 mg/kg, will be removed and disposed of as Bulk PCB Remediation Waste.

Remediation activities to be performed by others shall include the following:

1. Monitoring remediation activities as Owner's representative shall be performed by Facility Support Services.

 Collection of verification samples in accordance with Subparts O and P in accordance with 40 CFR Part 761 for PCB analysis shall be performed by Facility Support Services.

 Building demolition and site restoration shall be performed by Owner's general trades' contractor under separate contract following PCB remediation.

Materials containing <50 mg/kg that are excluded products will be transported to the Waste Management Turnkey Recycling and Environmental Enterprise, Rochester, New Hampshire municipal landfill, a landfill permitted to accept < 50 mg/kg PCB waste under State of New Hampshire permit No. DES-SW-95-001.

3.1 Site Preparation and Controls

The work shall be performed in accordance with the attached performance based technical specification section included in Appendix II. Prior to initiating PCB removal, the following site controls will be implemented:

- Remediation Contractor shall prepare a site specific work plan as detailed in specification section attached.
- Remediation Contractor shall prepare a Health & Safety Plan (HASP)
 developed specific to the site and work activities to be performed. All
 workers shall follow applicable federal and state regulations with regard to
 work activities, including but not limited to OSHA requirements for personal
 protective equipment and respiratory protection.
- Prior to any soil removal work, the boundaries of the excavation area shall be marked, properly secured, and a permit number obtained from "Call Before You Dig" shall be obtained.
- During all remediation activities, Remediation Contractor shall maintain control of all entrances and exits to the project site to ensure only authorized personnel enter the work areas and are afforded proper personal protective equipment and as required respiratory protection. All approaches to work areas shall be demarcated with appropriately worded warning signs.
- Work zones shall be established in accordance with technical specification to include abatement zone, decontamination zone, and support zone.
- Ground protection to prevent debris from escaping the abatement zone and to protect areas outside of abatement zone from PCB contamination shall be

- Collection of verification samples in accordance with Subparts O and P in accordance with 40 CFR Part 761 for PCB analysis shall be performed by Facility Support Services.
- 3. Building demolition and site restoration shall be performed by Owner's general trades' contractor under separate contract following PCB remediation.

Prior to abatement and remediation activities, site preparation and controls shall be established. PCB Bulk Product Waste and Bulk PCB Remediation Waste will be removed and transported off-site for disposal at an appropriately permitted disposal facility. PCB Bulk Product Waste shall be removed and managed in accordance with 40 CFR Part 761.62. Bulk PCB Remediation Waste shall be removed and managed in accordance with 40 CFR Part 761.61(a).

3.1 Site Preparation and Controls

The work shall be performed in accordance with the attached performance based technical specification section included in Appendix II. Prior to initiating PCB removal, the following site controls will be implemented:

- Remediation Contractor shall prepare a site specific work plan as detailed in specification section attached.
- Remediation Contractor shall prepare a Health & Safety Plan (HASP)
 developed specific to the site and work activities to be performed. All
 workers shall follow applicable federal and state regulations with regard to
 work activities, including but not limited to OSHA requirements for personal
 protective equipment and respiratory protection.
- Prior to any soil removal work, the boundaries of the excavation area shall be marked, properly secured, and a permit number obtained from "Call Before You Dig" shall be obtained.
- During all remediation activities, Remediation Contractor shall maintain control of all entrances and exits to the project site to ensure only authorized personnel enter the work areas and are afforded proper personal protective equipment and as required respiratory protection. All approaches to work areas shall be demarcated with appropriately worded warning signs.
- Work zones shall be established in accordance with technical specification to include abatement zone, decontamination zone, and support zone.
- Ground protection to prevent debris from escaping the abatement zone and to protect areas outside of abatement zone from PCB contamination shall be

utilized. Protection shall include the use of water impervious membrane covering which shall be secured to the ground surface. Edges shall be raised to prevent water runoff used for dust control during cutting and demolition of structures. The membrane shall be covered with a single layer of 6-mil polyethylene sheeting securely fastened to the foundation. Refer to technical specification section for requirements.

- Isolation barriers shall be installed on interior side of window and door systems to isolate these systems to the building exterior where work shall be performed. Protection shall include two layers of 6-mil polyethylene sheeting securely affixed to the inside finish surfaces of walls to isolate window or door systems to the building exterior. Refer to technical specification section or requirements.
- Isolation barriers shall be installed on the exterior side of window and door systems to contain these systems where work shall be performed to minimize dispersal of dust and debris. Protection shall include two layers of 6-mil polyethylene sheeting securely affixed to the exterior side finish surfaces to contain window or door systems. To minimize dust and debris contractor shall utilize negative pressure containment with use of negative air filtration units with HEPA filtration. Refer to technical specification section for requirements.
- All other openings to the building interior such as ventilation, ducts, and grilles shall be securely sealed with a single layer of 6-mil polyethylene sheeting from the building exterior. Refer to the technical specification section for requirements.
- Ground protection and isolation barrier shall remain in place throughout work to collect dust and debris resulting from PCB Bulk Product Waste removal and Bulk PCB Remediation Waste removal. All debris generated during operations including but not limited to visible caulking, dust and debris shall be HEPA vacuumed continuously throughout the work shift and at the end of a work shift to avoid accumulation. Any tears or rips that occur in protections shall be repaired, removed or replaced with new protections.
- It is anticipated that to facilitate the work movable staging or lifts will be utilized to access window systems. Wind screens consisting of 6-mil polyethylene sheeting shall be applied to staging or lift to prevent dispersal of dust and debris beyond the abatement zone. Platforms shall also be protected as appropriate to facilitate cleaning of dust and debris but not introduce trip or slip hazards.
- All equipment utilized to perform cutting, or demolition of adjacent materials shall be equipped with appropriate dust collection systems.

- All surfaces adjacent to materials removed shall be properly decontaminated upon completing the removal of PCB Bulk Product Waste and Bulk PCB Remediation Wastes. The work to cut and remove Bulk PCB Remediation Waste will result in dust on surfaces to remain and this dust may contain PCBs. All visible dust shall be removed using HEPA vacuums and wet cleaning methods with solvent or other acceptable products.
- Appropriate PCB waste containers shall be placed adjacent to abatement zones. Containers shall be lined, covered and secured. The PCB waste containers shall be properly marked as described in 40 CFR part 761.40 and 761.45.

3.2 Removal Procedures

The following removal procedures shall be utilized to conduct PCB Bulk Product Waste and Bulk PCB Remediation Waste removal.

3.2.1 PCB Bulk Product Waste Materials

PCB Bulk Product Waste Materials, including PCB caulking and glazing compound, shall be handled and removed from specified locations for proper disposal. Materials shall be removed in a manner which does not breakdown the materials into fine dust or powder to the extent feasible. Equipment and tools to be utilized shall include hand tools and mechanical equipment such as demolition hammers to remove materials from adjacent substrates. Mechanical removal equipment shall as appropriate be fitted with dust collection systems. Any dry or brittle caulking or glazing compound materials or other PCB Bulk Product Waste shall be removed with additional engineering controls such as use of a HEPA vacuum to remove accumulated dust or debris during removal. Once removed materials shall be placed in lined containers or into appropriate temporary containers such as 6-mil polyethylene disposal bags for controlled transport to PCB waste containers at the end of each work shift. PCB Bulk Product Waste shall be stored for disposal in accordance with 40 CFR 761.65 and marked in accordance with 40 CFR Part 761.40 Sequence of removal shall follow these general requirements: and 761.45.

- 1. Window systems with PCB containing glazing compound shall be removed in their entirety for disposal as Bulk PCB Remediation Waste (metal systems) and PCB Bulk Product Waste (PCB containing glazing compound). This includes but is not limited to aluminum frames, glass, PCB glazing compounds, clips, anchors, panels, insulation, column covers on interior, steel lintels at locations where masonry opening is to be demolished, and other materials as determined during demolition that are in contact with or contain PCB caulking or glazing compound.
- 2. PCB caulking shall be removed from all interior and exterior joints at masonry openings and properly containerized for disposal as PCB Bulk Product Waste. Surfaces from which PCB caulking has been removed shall be cleaned with solvent based cleaner and wire brush to remove all

- visible caulking. This cleaning procedure shall be conducted prior to removal of impacted substrate material as Bulk PCB Remediation Waste.
- Removal and off-site disposal of caulking associated with painted steel window lintels or painted steel door frames at designated locations.

3.2.2 Bulk PCB Remediation Waste - Adjacent Building Materials

Bulk PCB Remediation Waste Materials include surfaces adjacent to PCB Bulk Products, such as, wood, porous brick and porous concrete block. The secondary waste resulting from removal of adjacent surfaces will be PCB contaminated dust and debris from cutting, and removal of surfaces. This waste shall be immediately containerized in temporary 6-mil polyethylene disposal bags for disposal. These containers shall be sealed in the abatement zone when full during collection and then placed in disposal containers/storage trailers; the containers shall not be emptied into other containers to avoid dispersal of dust or fugitive emissions. No dry sweeping, dusting or blowing shall be allowed.

The use of minimal quantities of water to moisten the generated dust prior to collection shall be utilized. Under no circumstances shall the Bulk PCB Remediation Waste show evidence of free liquid water, pooling, or ponding within the waste stream. Any liquid used to wet the dust and debris to control fugitive emissions shall be collected and decontaminated in accordance with 40 CFR 761.79 (b) or disposed of as PCB Liquid Waste in accordance with 40 CFR Part 761.60 (a). All rags and other cleaning materials used shall also be properly disposed of as PCB Remediation Waste in accordance with 40 CFR Part 761.61(a) (5) (v) (A). All waste containers shall comply with 40 CFR 761.65 and be appropriately labeled in accordance with 40 CFR Part 761 .40 and 761.45. Sequence of removal shall follow these general requirements:

- 1. Painted steel door frames shall be removed intact and disposed of as Bulk PCB Remediation Waste.
- 2. Testing has confirmed PCB ≥ 1 mg/kg at a depth of at least 1 inch from caulking joint in adjacent porous masonry but ≤ 1 mg/kg or Not Detected at a distance of 6-8 inches from caulking joint and exterior brick. Removal of porous brick and concrete block shall be performed using mechanical tools equipped with dust controls as specified below:
 - a. Exterior porous brick veneer shall be removed at first full course brick masonry joint in straight vertical cut line from foundation to soffit at all vertical window jambs. It is estimated that the maximum distance from the opening shall be approximately 8 inches. All removed material shall be disposed of as Bulk PCB Remediation Waste.

- Interior porous concrete block shall be removed in a staggered b. pattern removing an entire 1/2 whole block at mortar joint either from vertical masonry opening or at point where in contact with PCB caulking material. The method shall be utilized to facilitate repair of walls. Work shall be coordinated to ensure proper shoring and bracing of lintels above work area prior to performance of work. All removed material shall be disposed of as Bulk PCB Remediation Waste.
- 3. Once materials have been removed and surfaces cleaned Facility Support Services shall be notified. Post testing verification sampling shall be performed once visually inspected to verify removal and cleaning.

3.2.3 Bulk PCB Remediation Waste - Soil and Asphalt

All soils, gravel and asphalt designated for removal shall be excavated and transported off-site as Bulk PCB Remediation Waste ≥50 mg/kg. Asphalt shall be removed to at least 2.0 ft. distant from source material. Soil shall be removed at least 2.0 ft. distant and at least to a depth of 2.0 feet from source material. Soil and asphalt removal shall be completed in accordance with 4.0 CFR Part 761.61 (a). The remediation goal is to remove PCB contaminated soils and asphalt to meet the clearance concentration of ≤ 1 mg/kg. Post removal verification sampling of soil shall be conducted by Facility Support Services, from the limits of excavation in all excavation areas to demonstrate that the cleanup goals have been met. All asphalt designated shall be removed entirely for disposal as PCB waste \geq 50 mg/kg.

3.2.4 Bulk Product Waste Materials < 50 mg/kg

Connecticut Regulated Building Product Waste Material with < 50 mg/kg PCB, including caulking and glazing compounds associated with metal non-porous window systems, shall be handled and removed from specified locations for Materials shall be removed in a manner which does not proper disposal. breakdown the materials into fine dust or powder to the extent feasible. For glazing compounds the entire window sash assemblies shall be removed for disposal.

Equipment and tools to be utilized shall include hand tools and mechanical equipment such as demolition hammers to remove materials from adjacent substrates. Mechanical removal equipment shall as appropriate be fitted with dust collection systems. Any dry or brittle caulking materials or other Bulk Product Waste shall be removed with additional engineering controls such as the use of HEPA a vacuum to remove accumulated dust or debris during removal.

Once removed, materials shall be placed in lined containers or into appropriate temporary containers such as 6-mil polyethylene disposal bags for controlled transport to PCB waste containers at the end of each work shift. Bulk Product

Waste <50 mg/kg shall be stored for disposal in a secured area and removed from the Site within 30 days of waste generation.

3.3 Air Monitoring Plan

This Air Monitoring Plan (AMP) sets forth the procedures that will be used to conduct air monitoring and air sampling during the PCB remediation at the subject site. The primary objective of the air monitoring program is to monitor airborne PCB emissions generated during remediation and demolition activities at the facility and to limit the spread of any such emissions beyond the remediation area.

The focus of the monitoring will be to provide current information utilizing a combination of real-time monitoring of dust and pressure differential measurements inside and outside containment areas and off-site laboratory analysis that will enable the project monitor to audit contractor performance and provide an initial assessment of cleaned areas.

Airborne dust concentrations will be monitored continuously during remediation activities at monitoring points at the perimeter of containment areas using a real time dust meter. For exterior excavations real time dust monitoring will be performed at two down wind locations from the excavation areas. A dust Action Level of 100 $\mu g/m3$ will be established. If an exceedance of the Action Level is detected, background levels will be reviewed to determine if the source is on-site or off-site. If the source is on-site, activities will be halted and actions taken to suppress the dust.

In addition to perimeter monitoring, the Site Remediation Contractor for this project will be proactive in minimizing the generation of dust by implementing control procedures, including regular covering of waste stockpiles and spraying and misting of the excavations and masonry removal areas. Additional measures may include limiting or eliminating stockpiles, reducing the size of excavations, limiting hours of operation, and limiting operation in hot, dry weather.

In addition to dust monitoring, perimeter air samples will also be collected for PCB concentrations. Perimeter sampling for PCBs will be performed at a frequency of approximately one sample collected for every 40 hours of remediation work.

PCB in air samples will be collected and analyzed using U.S. EPA Method TO-10A with reporting of PCBs homologues and 209 congeners for every fifth sample collected. This method involves collecting a 24-hour air sample using a modified polyurethane foam (PUF) sampler. Airborne PCBs are collected on a PUF cartridge preceded by a quartz fiber filter. Both the cartridge and the filter are submitted for laboratory analysis. Airborne PCB concentrations will be reported in nanograms per cubic meter (ng/m³), and detection limits of approximately 5 ng/m³ can usually be achieved. The action level for perimeter PCB air sampling will be the EPA Public Health guidance adult exposure level for indoor air quality in schools of 450 ng/m³.

For interior remediation work air samples will be collected at two air monitoring stations, at the perimeter of the containment area.

For exterior excavation work air samples will be collected at two downwind locations. Actual sampler locations in the field may differ slightly if necessary to place the units in clear, unobstructed locations.

The "downwind" sample will be selected based on the meteorological data collected at the site. Wind data from the work shift will be used to make this determination, rather than 24-hour data.

One day of background sampling will be performed prior to the beginning of remedial activities. In addition, at least 2 days of post-remediation monitoring will be conducted after the PCB remediation activities are complete. If the results of this post-remediation sampling exceed 10 percent of the action level and are more than twice the background levels, additional periodic monitoring will be performed.

All perimeter air samples will be analyzed using the best turnaround time available. For PUF analysis this is typically 72 hours. Results will be either faxed or emailed directly from the lab to the field office. From there they will be disseminated to the parties. Any result exceeding 50 percent of the action level will be immediately forwarded to the Owner. All routine air data will be presented in tabular format as an attachment to the weekly report. Data will also be posted in the field office.

Any dust concentration result over the 100 ug/m³ action level or PCB concentration result exceeding 50 percent of the 450 ng/m³ action level will be considered "elevated," and immediate measures will be taken to reduce perimeter PCB air concentrations. These initial measures may include:

- Increased use of water misting at the excavation, on waste accumulation areas, and at masonry removal areas;
- Covering waste stockpiles and/or inactive work areas;
- Altering work practices such as moving to other work locations on site, or working with different materials;
- Working a different shift (night, for example) to minimize volatilization; and,
- Reducing the area of waste that is exposed.

If PCB concentrations exceed the action level in any perimeter sample, all parties will be immediately notified and a meeting or conference call will be conducted to review the circumstances of the exceedance and determine what additional measures are necessary to prevent a recurrence. Such measures may include a reduced work shift or handling less material per day.

A follow-up air sample will be collected after remedial measures have been implemented which will include reporting of PCBs nine homologues and 209.

If a pattern of repeated exceedances emerges, all PCB excavation and handling activities will cease and all potential sources will be covered until an alternative material handling plan can be developed. Such measures may include a reduced work shift, handling less material per day, or backfilling excavations more quickly.

Quality control samples for perimeter air sampling will consist of trip blanks. The trip blank will consist of a PUF cartridge and a quartz fiber filter. The cartridge and filter will be prepared by the laboratory and shipped in a cooler with the other media. The trip blank will not be opened in the field. A minimum of one blank PUF sample per week will be submitted to the laboratory for analysis along with the samples. Blank samples will be numbered, logged, and labeled in the same manner as actual PUF samples, and no information will be provided to the laboratory that distinguishes them as blanks.

Each sample, including quality control samples, will be identified with a unique sample number. This number will provide easy identification of the sample in field logs, field data sheets, analytical reports, chain-of-custody forms, and project reports.

Sample number and corresponding sample information such as site name, sampling date, and sample location will be kept in a sample log.

All air sample cartridges and tubes will be labeled in the field prior to collection of the actual sample. Each label will include the following information:

- Sample location
- Sample number
- Date sampled
- Sampler's initials

Upon completion of each sampling event, the samples collected (and any quality control samples) will be packaged in a cooler for overnight shipment to the analytical laboratory.

Personnel samples will be collected in accordance with OSHA requirements and following a Site Specific Health and Safety Plan for the PCB abatement project to be provided by the Abatement Contractor. Personnel samples shall be capped at both ends, labeled, and folded into cardboard to prevent damage during shipment. PUF cartridges will be labeled, wrapped in aluminum foil, placed in padded sample bottles, and carefully packaged in the sample cooler to minimize jostling.

The sample cooler will then be filled completely with packing material such as Styrofoam peanuts to prevent shifting and damage during shipment. The signed chain-of-custody documents (discussed in the following subsection) will be placed in a large zipper-sealed bag and affixed to the inside of the cooler lid. The cooler will then be

sealed with packing tape, and custody seals will be affixed to ensure the integrity of the chain of custody.

The results of perimeter air sampling will be reviewed by the project monitor upon receipt from the laboratory. If airborne PCB concentrations at the site perimeter exceed the action level of 450 ng/m³, the measures described above will be implemented. The results of perimeter monitoring will be reviewed by the project monitor and posted daily in the field office.

All perimeter monitoring results will be recorded on the appropriate sample logs. Logs will be updated on a daily basis and posted in the project office at the site. A weekly summary of monitoring results will be submitted to the Owner.

At the conclusion of remedial activities and post remediation dust and accumulated accessible visible dust removal by the remediation contractor, the project monitor will conduct one round of 24 hour air monitoring for PCB Homologues at 8 indoor locations (and 2 exterior background locations).

A summary of air monitoring activities completed on this project along with all air sampling data generated will be included in the final project report. The report will address any incident in which action levels were exceeded and the actions taken to reduce airborne emissions to acceptable levels.

Verification Sampling Plan 3.4

Following the completion of the Bulk PCB Remediation Waste removal, Facility Support Services shall implement the following verification sampling plan in accordance with 40 CFR Part 761(a)(6) and, to the extent applicable, with Subparts O and P.

Upon completion of work in each area, a visual inspection of all remediated surfaces for visible evidence of dust and debris shall be performed. Surfaces shall also be inspected for visible PCB source materials that may not have been removed. The visual inspection shall provide in a preliminary way, verification that remediation work has been completed in accordance with this SIPD. Visual inspection shall ensure no visible dust or debris are present on adjacent surfaces where caulking was removed and adjacent surface cutting is completed. In addition to the remediation surfaces the surfaces of protective coverings and isolation barriers shall be inspected to ensure they are cleaned of dust and debris. No sampling shall be performed until the visual inspection is complete and the clearance criteria satisfied in each work area. The project shall be phased in accordance with the proposed construction schedule.

3.4.1 Porous Brick and Concrete Block Surfaces

Brick and concrete block surfaces shall be evaluated to verify that removal of Bulk PCB Remediation Waste has resulted in surfaces with ≤ 1 mg/kg for unrestricted use based on high occupancy use of the structure. Facility Support Services, shall follow the EPA "Draft Standard Operating Procedure for Sampling Concrete in the Field" (dated December 30, 1997), to collect verification samples. Brick and concrete samples shall be

collected by means of hammer drill with a 1-inch bit advanced into the substrate and the powdered substrate retained following the EPA concrete sampling SOP. The areas to be sampled shall be representative of the variety of conditions identified. Appropriate control samples shall also be collected.

The locations of samples shall be based on visual inspection results. The surfaces to be verified are irregularly shaped and the requirements for sample location and quantity as detailed in Subpart O shall be applied in a linear fashion in lieu of a grid pattern. The surfaces involve linear surfaces on multiple masonry openings resulting from the removal of PCB caulking materials and substrates. Sampling shall be conducted in accordance with the following protocol:

Window, door, and building caulk joints – one sample will be collected for every 10 linear ft. of building joint caulking, one sample shall be collected from each jamb having a linear dimension of 5 feet or less. Two samples shall be collected from each jamb having a linear length of not more than 10 linear feet. Note: interior sills of windows shall be removed in their entirety for disposal as $PCB \geq 50 \text{ mg/kg}$.

The laboratory shall be an accredited laboratory for PCB analysis. Analytical methods shall include extraction using EPA Method 3540C (Soxhlet Extraction) and analysis method SW846 8082. Results of the analysis shall be compared to the clearance objective, which for unrestricted use shall be ≤ 1 mg/kg. If any location exceeds this clearance objective, additional removal will be conducted.

3.4.2 Non-Porous Steel Surfaces

If steel lintels are to remain and the cleaned surface does not meet the Visual Standard No. 2, then wipe samples shall be collected from the surfaces in accordance with Subpart P of 40 CFR Part 761 as an alternative verification of cleaning once at a minimum paint is removed and the surface is smooth.

Wipe sampling of non-porous steel lintels shall be performed in accordance with Subpart P and compared to the high occupancy standard for non-porous surfaces of ≤ 10 ug/ 100cm^2 .

3.4.3 Soil and Asphalt

Following the completion of the initial soil/asphalt excavation, post excavation soil samples shall be collected. Where asphalt is present an asphalt sample shall be collected from the soil/asphalt removal limits at the surface of each excavation sidewall 2.0 ft. perpendicular and laterally out from each exterior PCB Bulk Product Source area (building expansion/window/door caulk joint). Where soil is present a soil sample shall be collected from the soil/asphalt removal limits at the surface of each excavation sidewall 2.0 ft. perpendicular and laterally out from each exterior PCB Bulk Product Source area. Where there are contiguous excavation areas soil/asphalt samples will collected from the sidewall 2 ft. laterally out from the farthest most PCB Bulk Product Source area for each contiguous excavated area. A soil sample shall also be collected at

the bottom of excavation area (2.0 ft. below surface grade) directly below each source area. In addition, 2 matrix spikes and 4 duplicates will be collected.

Asphalt samples will be collected using a steel chisel. Soil samples shall be collected by trowel or hand auger, and transferred to glass containers, labeled and delivered to the laboratory using proper chain of custody. Samples will be preserved using ice during transport to the laboratory. The tools utilized to collect samples shall be cleaned using laboratory grade detergent and hexane wash procedures between each sampling location.

The laboratory shall be an accredited laboratory for PCB analysis. The analysis methods shall include extraction using EPA Method 3540C (Soxhlet Extraction) and analysis for PCBs using EPA Method 8082. Results of analysis shall be compared to the clearance objective which for unrestricted use of soil shall be ≤ 1 mg/kg. If any location exceeds this clearance objective, additional removal of soil will be conducted and the verification process repeated.

3.4.4 Bulk Product Materials < 50 mg/kg

Verification sampling shall be performed after removal of Connecticut Regulated Building Product Waste Material with < 50 mg/kg PCB, including caulking and glazing compounds associated with window and door systems and for roof caulking/sealant. Verification wipe samples will be collected from non-porous metal window frames and lintels substrates at frequency of one sample/10 linear ft. Wipe sampling of non-porous steel materials will be compared to the high occupancy standard for non-porous surfaces of ≤ 10 ug/100cm².

For porous brick, concrete and roofing material substrates – one sample will be collected for every 10 linear ft. of < 50 mg/kg PCB caulking, one sample shall be collected from each jamb having a linear dimension of 5 feet or less. Two samples shall be collected from each jamb having a linear length of not more than 10 linear feet.

The laboratory shall be an accredited laboratory for PCB analysis. Analytical methods shall include extraction using EPA Method 3540C (Soxhlet Extraction) and analysis method SW846 8082. Results of the analysis shall be compared to the clearance objective, which for unrestricted use shall be ≤ 1 mg/kg. If any location exceeds this clearance objective, additional removal will be conducted.

IV. Schedule and Plan Certification

It is the intent of the Owner (Quinnipiac University) to begin removal of PCB Bulk Product Materials and Bulk PCB Remediation Waste in accordance with this plan. It is anticipated that the work shall be performed as expeditiously as possible including removal of PCB Bulk Product Waste followed by the removal of adjacent Bulk PCB Remediation Waste materials. Upon completing the Bulk PCB Remediation Waste removal and verification sampling confirming the Project Objectives are met, the remaining renovation project shall commence. No PCB work shall be performed outside of the secured and isolated Abatement Zone.

The Owner, hereby certifies that all sampling plans, sample collection procedures, sample preparation procedures, extraction procedures, and instrumental/chemical analysis procedures used to assess or characterize the PCB contamination at the cleanup site are on file at the University and available for EPA inspection.

Owner's Representative Joseph Rubertone, Quinnipiac University Associate Vice President for Facilities Administration	Date
Facility Support Services, LLC Representative Steven Daniels, LEP	Date

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Owner's Representative

Joseph Rubertone, Quinnipiac University

Associate Vice President for Facilities Administration

Facility Support Services, LLC Representative Steven Daniels, LEP

Senior Project Manager

Date

FIGURES

TABLES

Table 1: Bulk Product Analysis Results
Qunniplac University Alumni Hall/Student Center Renovation
Self Implementing On Site Cleanup and Disposal Plan

Gray interior building joint caulk Gray interior building joint caulking White interior building joint caulking Interior bldg joint caulking Exterior building caulk Exterior building caulk Interior Window Glazing			00100		
Gray interior building joint caulking White interior building joint caulking Interior bldg joint caulking Exterior building caulk Exterior building caulk Interior building caulk Interior building caulk	07/06/10	200	Ilon jamily	0 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	mg/kg
White interior building joint caulking White interior building joint caulking Interior bldg joint caulking Exterior building caulk Exterior building caulk Interior Window Glazing	01/00/10	02	HILL HILL	Alumni Hall	36.00
White interior building joint caulking Interior bldg joint caulking Exterior building caulk Exterior building caulk Interior Window Glazing	08/13/10	18	Alumni Hall	Alumni Hall corridor near entrance to 117	85,170.00
Interior bldg joint caulking Exterior building caulk Exterior building caulk Interior Window Glazing	08/13/10	19	Alumni Hall	Alumni Hall corridor near entrance to Rm. 117	2,675.00
Exterior building caulk Exterior building caulk Interior Window Glazing	08/27/10	10	Alumni Hall	West side bldg joint 5' North of window	27,300.00
Exterior building caulk Interior Window Glazing	07/05/10	20	Student Center	Student Center	N.D. < 1.0
Interior Window Glazing	07/05/10	90	Alumni Hall	Alumni Hall	55,000.00
6	07/05/10	10	Alumni Hall	Hallway south side of Alumni Hall	3.00
Interior window glazing	07/05/10	03	Alumni Hall	Room 205 TV lounge	85,000.00
Black interior window glazing	08/13/10	21	Alumni Hall	Alumni Hall-East Wall SE window	13.30
Black interior window glazing	08/13/10	24	Alumni Hall	Student Center-Room 205 North window	ND<15,3
Black interior window glazing	08/13/10	22	Alumni Hall	Alumni Hall-West Wall SW window	7.44
Exterior window glazing	07/05/10	04	Alumni Hall	Room 205 TV lounge	180.00
Exterior window glazing top layer	08/13/10	16	Alumni Hall	Alumni Hall-North wall 2nd window from west	24,000.00
Exterior window glazing bottom layer	08/13/10	- 17	Alumni Hall	Alumni Hall-North wall 2nd window from west	139.30
Interior window caulk	07/05/10	90	Student Center	Room 211	1.30
Interior window caulking	08/13/10	23	Alumni Hall	Alumni Hall West wall- SW window	87.40
Interior window caulking	08/13/10	25	Student Center	Student Center Room 211	ND<1.5
Window caulking	10/11/10	01	Alumni Hall	Alumni Hall interior north wall window 01	27.00
Window caulking	10/11/10	02	Alumni Hall	Alumni Hall interior north wall window 02	22.00
Exterior window caulking	08/13/10	14	Alumni Hall	Alumni Hall-West wall SW window	30.050.00
Window sill exterior caulk	10/11/10	01 sill	Room 207	Rm. 207 Window sill	54.00
Gray Interior door caulking	08/13/10	20	Alumni Hall	Alumni Hall corridor East entrance to to hall	18 90
Exterior door caulking	08/13/10	15	Alumni Hall	Alumni Hall-West wall NW door	34 460 00
Caulking remnant on brick Alumni Hall	10/12/10	01	Alumni Hall	Caulking around door on 1st floor	4 10
Paint (Chipped from wall to bare concrete)	10/04/10	Paintchip	Student Center	Room 205 Interior Wall	17 10
Paint (Chipped from wall to bare concrete)	10/04/10	Interior White Paint Chip	Alimni Hall	West Interior Wall	40.00
Paint Dust (Sanded area to bare concrete)	10/30/10	P1	Alumni Hall	South Interior Wall	13.70
Paint Dust (Sanded area to bare concrete)	10/30/10	P2	Alumni Hall	South Interior Wall	28.70
Paint Dust (Sanded area to bare concrete)	10/30/10	P3	Alumni Hall	South Interior Wall	22.00
Black Tar beneath floor slab	10/08/10	001	Alumni Hall	Alumni Hall Floor	ND<1.3
Black Tar beneath floor slab	10/08/10	002	Alumni Hall	Alumni Hall Floor	ND<1.0
Black Tar beneath floor slab	10/08/10	003	Alumni Hall	Alumni Hall Floor	ND<0.6
Grey-Black Caulk (Flashing Sealer)	10/11/10	01	Alumni Hall	Alumni Hall Roof	ND<1.0
Grey-Black Caulk (Flashing Sealer)	10/11/10	02	Alumni Hall	Alumni Hall Roof	ND<1.0
Grey-Black Caulk (Flashing Sealer)	10/11/10	03	Alumni Hall	Alumni Hall Roof	14.00
Black Roof Tar	10/12/10	01	Alumni Hall	Alumni Hall Roof	ND<1.0
Black Roof Tar	10/12/10	02	Alumni Hall	Alumni Hall Roof	ND<1.0
Black Roof Tar	10/12/10	03	Alumni Hall	Alumni Hall Roof	ND<1.7
Caulking around sink	10/12/10	01 Ladies 1st floor Caulk	Alumni Hall	Ladies restroom 1st floor	N.D. < 2.5
Caulking around sink	10/12/10	02 Ladies 2nd floor Caulk	Alumni Hall	Ladies restroom 2st floor	N.D. <1.3
Caulking around sink	10/12/10	03 Men's 1st floor Caulk	Alumni Hall	Men's restroom 1st floor	N.D. < .30
Caulking around sink	10/12/10	04 Men's 2nd floor Caulk	Alumni Hall	Men's restroom 2nd floor	N.D. <1.3
Glue daubs behind wood veneer	10/30/10	P4	Student Center	Rm. 117B	12.30
Glue daubs behind wood veneer	10/30/10	P5	Student Center	Rm. 117B	4.70
Glue daubs behind wood veneer	10/30/10	P6	Student Center	Rm. 117B	ND<0.30

Bold = Greater than or equal to 50 mg/kg

BRL = below laboratory reporting limits ND = Not Detected

FACILITY SUPPORT SERVICES, LLC

Table 2: Adjacent Porous Materials Summary Qunnipiac University Alumni Hall/Student Center Renovation Self Implementing On Site Cleanup and Disposal Plan

HON	DATE COLLECTED	SAMPLE NO.	BUILDING	LOCATION	RESULTS PCB
	08/13/10				mg/kg
		01	Alumni Hall	0.0"-0.5" from West side SW bldg joint	385.400
	00100140		Alumni Hall	0.5"-1.0" from West side bldg joint 25' N of SW corner	12.830
	00/50/10	- 0	Alumni Hall	1 0"-1 5" from West side bldg joint 25' N of SW corner	10.580
	08/26/10	0.3	Alumni Hall	1.5"-2.0" from West side bidg joint 25" N of SW corner	10.610
	00/22/40	27	Alumni Hall	0.5"-1.0" from bldg joint. Hallway South of Alumni Hall	80.600
	08/27/10	1,5	Alumni Hall	1.0"-1.5" from bldg joint, Hallway South of Alumni Hall	33.300
	08/27/10	16	Alumni Hall	1.5"-2.0" from bldg joint, Hallway South of Alumni Hall	29.900
	09/12/10	01	Alumni Hall	3.25"-4.00" from West side bldg joint 25' N of SW comer	1.040
	04/12/10	00	Alumni Hall	7.0"-7.5" from West side bldg joint 25' N of SW comer	0.912
	09/12/10	12	Alumni Hall	3.25"-4.0" from bldg. joint Hallway South of Alumni Hall	7.005
	09/12/10	13	Alumni Hall	7.0"-7.5" from bldg. joint Hallway South of Alumni Hall	2.643
	09/26/10	03	Alumni Hall	7.5"-8.0" from bldg. joint Hallway South of Alumni Hall	N.D. < 1.3
	10/11/10	Hallway A 1.5"	Alumni Hall	1.5" from bidg joint Hallway along Room 117	N.D. < 0.50
	10/11/10	Hallway A 2.5"	Alumni Hall	2.5" from bldg joint Hallway along Room 117	8,000
	10/11/10	Hallway A 4.5"	Alumni Hall	4.5" from bldg joint Hallway along Room 117	N.D. < 1.0
	10/11/10	Hallway B 1.5"	Alumni Hall	1.5" from bldg joint Hallway along Room 117	2.600
	10/11/10	Hallway B 2.5"	Alumni Hall	2.5" from bldg joint Hallway along Room 117	0.740
	10/11/10	Hallway B 4.5"	Alumni Hall	4.5" from bldg joint Hallway along Room 117	1.100
Brick substrate	10/12/10	Brick A 1.5"	Alumni Hall	1.5" from bldg joint West Exterior Alumni Hall	1.500
	10/12/10	Brick A 2.5"	Alumni Hall	2.5" from bldg joint West Exterior Alumni Hall	N.D. < .50
	10/12/10	Brick B 4.5"	Alumni Hall	4.5" from bldg joint West Exterior Alumni Hall	N.D. < .50
	11/18/10	B001 0.0-0.5 in	Student Center	0 - 1.0' from Room 211 window caulk	N.D.
	08/13/10	03	Alumni Hall	0.0"-0.5" from NW bldg joint Alumni Hall West Exterior	1.610
	08/13/10	05	Alumni Hall	0.0"-0.5" from Alumni Hall West side below SW window caulk	7.120
	08/13/10	12	Alumni Hall	0.0"-0.5" from Alumni Hall East side at NE joint	39.870
	08/13/10	13	Alumni Hall	0.0"-0.5" from Alumni Hall East side below South window	3,160
	08/26/10	04	Alumni Hall	1.0"=2.0" from Alumni Hall West side-SW corner window caulk	0.442
	08/26/10	90	Alumni Hall	2.0"-3.0" from West side-SW corner window caulk	0.481
	08/26/10	20	Alumni Hall	1.0"-2.0" from West side bldg joint 5' South of door	ND<0.343
	08/26/10	80	Alumni Hall	2.0"-3.0" from West side bldg joint 5' South of door	2.380
	08/28/10	17	Alumni Hall	0.0" -1.0" from bldg joint North Side Alumni Hall	11.700
	08/28/10	18	Alumni Hall	1,0"-2.0" inches from bldg joint North Side alumni Hall	4.169
	08/28/10	21	Alumni Hall	2.0"-4.0" from bldg joint East Side Alumni Hall	2.360
	09/12/10	03	Alumni Hall	4.0"-6.0" from West side bldg joint 5' South of door	0.792
	09/12/10	04	Alumni Hall	6.0"-8.0" from West side bldg joint 5' South of door	0.583
	09/12/10	90	Alumni Hall	4.0"-6.0" from North side exterior NW building joint	1.130
	09/12/10	20	Alumni Hall	6.0"-8.0" from North side exterior NW building joint	6.619
Asphalt 0	09/12/10	80	Alumni Hall	4.0"-6.0" from Alumni Hall East side at NE joint	0.449
Asphalt 0	09/12/10	60	Alumni Hall	6.0"-8.0" fromAlumni Hall East side at NE joint	N.D. < .50

Bold = PCB concentration > 1 ppm ND = Not Detected

Table 2 con't: Adjacent Porous Materials Summary Qunnipiac University Alumii Hall/Student Center Renovation Self Implementing On Site Cleanup and Disposal Plan

AND THE RESERVE THE PERSON NAMED IN	RESULTS PCB mg/kg	1520.000	129.000	42.100	15.700	4.850	9.940	6.300	ND<0.0655	6.915	3.300	N.D. < 1.3	7.100	3.800	0.610	N.D. < 0.50	5.300	1.300	N.D. < 0.50	2.700	0.470	N.D. <0.30	2.100	N.D. < 0.50	N.D. < 0.50	7.600	1.400	0.490	1.300	N.D. < 0.50	N.D. <0.30	4.900	4.200	
Self Implementing On Site Cleanup and Disposal Plan	LOCATION	0.0"- 0.5" from bldg joint West Interior Wall Alumni Hall	1.0"- 1.5" from bldg joint West Interior Wall Alumni Hall	1.5"- 2.0" from bldg joint West Interior Wall Alumni Hall	0 .5"-1.0" from Room 205 window caulk	1.0"-1.5" from Room 205 window caulk	2.0"- 3.0" from bldg joint West Interior Wall Alumni Hall	3.0"- 4.0" from bldg joint West Interior Wall Alumni Hall	2.0"-3.0" from Room 205 window caulk	3.0"-4.0" from Room 205 window caulk	3.0"-4.0" from Room 205 window caulk	4.0"-4.5" from Room 205 window caulk	4.0"- 5.0" from bldg joint West Interior Wall Alumni Hall	1.5" from bldg joint West Interior Wall Alumni Hall	2.5" from bldg joint West Interior Wall Alumni Hall	4.5" from bldg joint West Interior Wall Alumni Hall	1.5" from bldg joint West Interior Wall Alumni Hall	2.5" from bldg joint West Interior Wall Alumni Hall	4.5" from bldg joint West Interior Wall Alumni Hall	1.5" from North side interior bldg joint	2.5" from North side interior bldg joint	4.5" from North side interior bldg joint	1.5" from Room 207 Window Caulk	2.5" from Room 207 Window Caulk	4.5" from Room 207 Window Caulk	1.5" from Room 207 Window Caulk	2.5" from Room 207 Window Caulk	4.5" from Room 207 Window Caulk	1.5" from Room 207 Window Caulk	2.5" from Room 207 Window Caulk	4.5" from Room 207 Window Caulk	Below Alumni Hall West Side interior window sill caulk	Below Alumni Hall West Side interior window sill caulk	
seit implementing O	BUILDING	Alumni Hall	Alumni Hall	Alumni Hall	Alumni Hall	Alumni Hall	Alumni Hall	Alumni Hall	Alumni Hall	Alumni Hall	Alumni Hall	Alumni Hall	Alumni Hall	Alumni Hall	Alumni Hall	Alumni Hall	Alumni Hall	Alumni Hall	Alumni Hall	Alumni Hall	Alumni Hall	Alumni Hall	Alumni Hall	Alumni Hall	Alumni Hall	Alumni Hall	Alumni Hall	Alumni Hall	Alumni Hall	Alumni Hall	Alumni Hall	Alumni Hall	Alumni Hall	
	SAMPLE NO.	11	12	13	22	23	10	11	14	15	01	02	28	Wall A 1.5"	Wall A 2.5"	Wall A 4.5"	Wall B 1.5"	Wall B 2.5"	Wall B 4.5"	Wall C 1.5"	Wall C 2.5"	Wall C 4.5"	Room 207 Wall A 1.5"	Room 207 Wall A 2.5"	Room 207 Wall A 4.5"	Room 207 Wall B 1.5"	Room 207 Wall B 2.5"	Room 207 Wall B 4.5"	Room 207 Wall C 1.5"	Room 207 Wall C 2.5"	Room 207 Wall C 4.5"	Wood Substrate 01	Wood Substrate 02	
AND DESCRIPTION OF PERSONS ASSESSMENT ASSESSMENT ASSESSMENT ASSESSMENT ASSESSMENT ASSESSMENT ASSESSMENT ASSESS	DATE	08/27/10	08/27/10	08/27/10	08/28/10	08/28/10	09/12/10	09/12/10	09/12/10	09/12/10	09/26/10	09/26/10	09/26/10	10/11/10	10/11/10	10/11/10	10/11/10	10/11/10	10/11/10	10/11/10	10/11/10	10/11/10	10/11/10	10/11/10	10/11/10	10/11/10	10/11/10	10/11/10	10/11/10	10/11/10	10/11/10	10/12/10	10/12/10	40/45/40
	MATERIAL DESCRIPTION	Concrete Block Substrate	Concrete Block Substrate	Concrete Block Substrate	Concrete Block Substrate	Concrete Block Substrate	Concrete Block Substrate	Concrete Block Substrate	Concrete Block Substrate	Concrete Block Substrate	Concrete Block Substrate	Concrete Block Substrate	Concrete Block Substrate	Concrete Block Substrate	Concrete Block Substrate	Concrete Block Substrate	Concrete Block Substrate	Concrete Block Substrate	Concrete Block Substrate	Concrete Block Substrate	Concrete Block Substrate	Concrete Block Substrate	Concrete Block Substrate	Concrete Block Substrate	Concrete Block Substrate	Concrete Block Substrate	Concrete Block Substrate	Concrete Block Substrate	Concrete Block Substrate	Concrete Block Substrate	Concrete Block Substrate	Wood Substrate	Wood Substrate	Manage Contractor

Bold = PCB concentration ≥ 1 ppm ND = Not Detected

Table 3: Gravel & Soil Analysis Results Qunnipiac University Alumni Hall/Student Center Renovation Self Implementing On Site Cleanup and Disposal Plan

SAMPLE NO. BUILDING			The state of the s	sell Implementing on site cleanup and Disposal Fran		
02 Alumni Hall 04 Alumni Hall 06 Alumni Hall 08 Alumni Hall 09 Alumni Hall 09 Alumni Hall 05 Alumni Hall 06 Alumni Hall 07 Alumni Hall 08 Alumni Hall 08 Alumni Hall 09 Alumni Hall 01 Alumni Hall 05 Alumni Hall 06 Alumni Hall 07 Alumni Hall 08 Alumni Hall 08 Alumni Hall 09 Alumni Hall	DATE			MOITAGO	MATERIAL	RESULTS
04 Alumni Hall 06 Alumni Hall 07 Alumni Hall 09 Alumni Hall 10 Alumni Hall 09 Alumni Hall 05 Alumni Hall 06 Alumni Hall 07 Alumni Hall 08 Alumni Hall 08 Alumni Hall 08 Alumni Hall 09 Alumni Hall 01 Alumni Hall 01 Alumni Hall 01 Alumni Hall 05 Alumni Hall 06 Alumni Hall 07 Alumni Hall 08 Alumni Hall 09 Alumni Hall 01 Alumni Hall	COLLECTED	SAMPLE NO.	BOILDING	LOCATION	DESCRIPTION	PCB mg/kg
04 Alumni Hall 06 Alumni Hall 07 Alumni Hall 09 Alumni Hall 10 Alumni Hall 05 Alumni Hall 06 Alumni Hall 05 Alumni Hall 06 Alumni Hall 07 Alumni Hall 08 Alumni Hall 09 Alumni Hall 01 Alumni Hall 02 Alumni Hall 03 Alumni Hall 04 Alumni Hall 05 Alumni Hall 06 Alumni Hall 07 Alumni Hall 08 Alumni Hall 09 Alumni Hall 09 Alumni Hall	08/13/10	02	Alumni Hall	Alumni Hall West side at NW building joint	Soil 0-4 inches	353.000
06 Alumni Hall 08 Alumni Hall 09 Alumni Hall 10 Alumni Hall 11 Alumni Hall 09 Alumni Hall 09 Alumni Hall 09 Alumni Hall 19 Alumni Hall 20 Alumni Hall 21 Alumni Hall 22 Alumni Hall 23 Alumni Hall 24 Alumni Hall 25 Alumni Hall 26 Alumni Hall 27 Alumni Hall 28 Alumni Hall 28 Alumni Hall 29 Alumni Hall 20 Alumni Hall 20 Alumni Hall 20 Alumni Hall 21 Alumni Hall 22 Alumni Hall 23 Alumni Hall 24 Alumni Hall 25 Alumni Hall 26 Alumni Hall 27 Alumni Hall 28 Alumni Hall 29 Alumni Hall 20 Alumni Hall 20 Alumni Hall 21 Alumni Hall	08/13/10	04	Alumni Hall	Alumni Hall West side below SW window	Soil 0-4 inches	4.600
O7 Alumni Hall 08 Alumni Hall 10 Alumni Hall 11 Alumni Hall 09 Alumni Hall 09 Alumni Hall 05 Alumni Hall 06 Alumni Hall 07 Alumni Hall 08 Alumni Hall 09 Alumni Hall 09 Alumni Hall 00 Al	08/13/10	90	Alumni Hall	Alumni Hall-North side below bldg joint corner	Gravel 0-4 inches	0.130
09 Alumni Hall 10 Alumni Hall 11 Alumni Hall 05 Alumni Hall 09 Alumni Hall 19 Alumni Hall 05 Alumni Hall 07 Alumni Hall 08 Alumni Hall 08 Alumni Hall 08 Alumni Hall 08 Alumni Hall 09 Alumni Hall 01 Alumni Hall 08 Alumni Hall 08 Alumni Hall 09 Alumni Hall	08/13/10	40	Alumni Hall	Alumni Hall-North side below bldg joint corner	Soil 4-6 inches	7.720
10 Alumni Hall 10 Alumni Hall 11 Alumni Hall 12 Alumni Hall 19 Alumni Hall 20 Alumni Hall 20 Alumni Hall 20 Alumni Hall 21 Alumni Hall 22 Alumni Hall 23 Alumni Hall 24 Alumni Hall 25 Alumni Hall 25 Alumni Hall 26 Alumni Hall 27 Alumni Hall 28 Alumni Hall 28 Alumni Hall 29 Alumni Hall 21 Alumni	08/13/10	80	Alumni Hall	Alumni Hall-North side below West window	Gravel 0-4 inches	0.324
10 Alumni Hall 05 Alumni Hall 09 Alumni Hall 19 Alumni Hall 20 Alumni Hall 01 Alumni Hall 05 Alumni Hall 01 Alumni Hall 22 Alumni Hall 23 Alumni Hall 24 Alumni Hall 25 Alumni Hall 26 Alumni Hall 27 Alumni Hall 28 Alumni Hall 29 Alumni Hall 20 Alumni Hall 21 Alumni Hall 22 Alumni Hall 23 Alumni Hall 24 Alumni Hall 25 Alumni Hall 26 Alumni Hall 27 Alumni Hall 28 Alumni Hall 29 Alumni Hall 21 Alumni Hall 21 Alumni Hall 22 Alumni Hall 23 Alumni Hall 24 Alumni Hall 25 Alumni Hall 26 Alumni Hall 27 Alumni Hall 28 Alumni Hall 29 Alumni Hall 20 Alumni Hall	08/13/10	60	Alumni Hall	Alumni Hall North side below West window	Soil 4-7 inches	3.770
11 Alumni Hall 05 Alumni Hall 19 Alumni Hall 20 Alumni Hall 20 Alumni Hall 05 Alumni Hall 01 Alumni Hall 21 Alumni Hall 22 Alumni Hall 23 Alumni Hall 24 Alumni Hall 25 Alumni Hall 26 Alumni Hall 27 Alumni Hall 28 Alumni Hall 28 Alumni Hall 29 Alumni Hall 20 Alumni Hall 20 Alumni Hall 21 Alumni Hall 22 Alumni Hall 23 Alumni Hall 24 Alumni Hall 25 Alumni Hall 26 Alumni Hall 27 Alumni Hall 28 Alumni Hall 29 Alumni Hall 20 Alumni Hall 20 Alumni Hall 20 Alumni Hall 21 Alumni Hall 21 Alumni Hall	08/13/10	10	Alumni Hall	Alumni Hall-North side below East window	Gravel 0-4 inches	0.158
05 Alumni Hall 19 Alumni Hall 20 Alumni Hall 05 Alumni Hall 05 Alumni Hall 01 Alumni Hall 21 Alumni Hall 22 Alumni Hall 23 Alumni Hall 24 Alumni Hall 25 Alumni Hall 26 Alumni Hall 27 Alumni Hall 28 Alumni Hall 29 Alumni Hall 20 Alumni Hall 20 Alumni Hall 21 Alumni Hall 22 Alumni Hall 23 Alumni Hall 24 Alumni Hall 25 Alumni Hall 26 Alumni Hall 27 Alumni Hall 28 Alumni Hall 28 Alumni Hall 29 Alumni Hall 20 Alumni Hall 20 Alumni Hall 20 Alumni Hall 21 Alumni Hall 21 Alumni Hall 21 Alumni Hall	08/13/10	1	Alumni Hall	Alumni Hall North side below East window	Soil 4-7 inches	3.167
19 Alumni Hall 20 Alumni Hall 05 Alumni Hall 05 Alumni Hall 01 Alumni Hall 21 Alumni Hall 22 Alumni Hall 23 Alumni Hall 24 Alumni Hall 25 Alumni Hall 26 Alumni Hall 27 Alumni Hall 28 Alumni Hall 28 Alumni Hall 29 Alumni Hall 21 Alumni Hall 21 Alumni Hall 22 Alumni Hall 23 Alumni Hall 24 Alumni Hall 25 Alumni Hall 26 Alumni Hall 27 Alumni Hall 28 Alumni Hall 29 Alumni Hall 20 Alumni Hall 20 Alumni Hall 21 Alumni Hall 21 Alumni Hall 21 Alumni Hall	08/26/10	05	Alumni Hall	West side-SW corner window	Soil (4-6 inches)	0.327
19 Alumni Hall 20 Alumni Hall 05 Alumni Hall 01 Alumni Hall 01 Alumni Hall 22 Alumni Hall 22 Alumni Hall 23 Alumni Hall 24 Alumni Hall 25 Alumni Hall 26 Alumni Hall 27 Alumni Hall 28 Alumni Hall 28 Alumni Hall 29 Alumni Hall 21 Alumni Hall 21 Alumni Hall 21 Alumni Hall 22 Alumni Hall 23 Alumni Hall 24 Alumni Hall 25 Alumni Hall 26 Alumni Hall 27 Alumni Hall 28 Alumni Hall 29 Alumni Hall 20 Alumni Hall 20 Alumni Hall 21 Alumni Hall	08/26/10	60	Alumni Hall	West side bldg joint 5' South of door	Soil (4-6 inches)	10.890
20 Alumni Hall 05 Alumni Hall 01 Alumni Hall S1 Alumni Hall S2 Alumni Hall S2 Alumni Hall S3 Alumni Hall S5 Alumni Hall S6 Alumni Hall S6 Alumni Hall S7 Alumni Hall S8 Alumni Hall S1 Alumni Hall S1 Alumni Hall S2 Alumni Hall S3 Alumni Hall S4 Alumni Hall S5 Alumni Hall S8 Alumni Hall S9 Alumni Hall S10 Alumni Hall	08/28/10	19	Alumni Hall	North side exterior NW building joint	Soil 6-8 inches	0.563
05 Alumni Hall 05 Alumni Hall 01 Alumni Hall S1 Alumni Hall S2 Alumni Hall S3 Alumni Hall S5 Alumni Hall S6 Alumni Hall S7 Alumni Hall S8 Alumni Hall S9 Alumni Hall S9 Alumni Hall S10 Alumni Hall S11 Alumni Hall S11 Alumni Hall	08/28/10	20	Alumni Hall	North side exterior West building joint West window	Soil 6-8 inches	0.137
05 Alumni Hall 01 Alumni Hall S1 Alumni Hall S2 Alumni Hall S3 Alumni Hall S4 Alumni Hall S5 Alumni Hall S6 Alumni Hall S7 Alumni Hall S8 Alumni Hall S9 Alumni Hall S9 Alumni Hall S10 Alumni Hall S11 Alumni Hall S11 Alumni Hall	09/12/10	05	Alumni Hall	Below exterior caulk West side bldg joint 5' S of door	Soil 6-8 inches	7.310
S1 Alumni Hall S2 Alumni Hall S3 Alumni Hall S4 Alumni Hall S5 Alumni Hall S6 Alumni Hall S7 Alumni Hall S8 Alumni Hall S9 Alumni Hall S9 Alumni Hall S10 Alumni Hall S11 Alumni Hall S12 Alumni Hall S13 Alumni Hall S14 Alumni Hall S15 Alumni Hall S16 Alumni Hall S17 Alumni Hall S18 Al	09/26/10	05	Alumni Hall	West side bldg joint 5' South of door	Soil 10-12"	4.000
S1	10/04/10	10	Alumni Hall	Below exterior caulk SW joint West side of Bldg.	Soil 10-12 inches	5.200
S2 Alumni Hall S4 Alumni Hall S5 Alumni Hall S6 Alumni Hall S7 Alumni Hall S7 Alumni Hall S8 Alumni Hall S9 Alumni Hall S10 Alumni Hall S11 Alumni Hall	10/12/2010	S1	Alumni Hall	1 ft. North of exterior caulk West side bldg joint 5' S of door	Soil 1 3-6 inches	N.D. <.30
S3 Alumni Hall S4 Alumni Hall S5 Alumni Hall S6 Alumni Hall S7 Alumni Hall S8 Alumni Hall S9 Alumni Hall S10 Alumni Hall	10/12/2010	SS	Alumni Hall	1 ft. West of exterior caulk West side bldg joint 5' S of door	Soil 2 3-6 inches	N.D. <.30
S4 Alumni Hall S5 Alumni Hall S6 Alumni Hall S7 Alumni Hall S8 Alumni Hall S9 Alumni Hall S10 Alumni Hall S11 Alumni Hall Alum	10/12/2010	S3	Alumni Hall	1 ft. South of exterior caulk West side bldg joint 5' S of door	Soil 3 3-6 inches	N.D. <.30
S5 Alumni Hall S6 Alumni Hall S7 Alumni Hall S8 Alumni Hall S9 Alumni Hall S10 Alumni Hall S11 Alumni Hall	10/12/2010	S4	Alumni Hall	Below exterior caulk West side bldg joint 5' S of door	Soil 4 16-18 inches	1.100
S6 Alumni Hall S7 Alumni Hall S8 Alumni Hall S9 Alumni Hall S10 Alumni Hall S11 Alumni Hall	10/12/2010	SS	Alumni Hall	1 ft. North of center West Side bldg.	Soil S5 3-6 inches	N.D. <.30
S7 Alumni Hall S8 Alumni Hall S9 Alumni Hall S10 Alumni Hall S11 Alumni Hall	10/12/2010	Se	Alumni Hall	1 ft. West of center West Side bldg.	Soil S6 3-6 inches	N.D. <.30
S9 Alumni Hall S9 Alumni Hall S10 Alumni Hall S11 Alumni Hall	10/12/2010	S7	Alumni Hall	1 ft. South of center West Side bldg.	Soil S7 3-6 inches	N.D. <.30
S9 Alumni Hall S10 Alumni Hall S11 Alumni Hall	10/12/2010	88	Alumni Hall	Below center West side bldg.	Soil S8 3-6 inches	N.D. <.30
S10 Alumni Hall S11 Alumni Hall	10/12/2010	88	Alumni Hall	 North of exterior caulk SW joint West side of Bldg. 	Soil S9 3-6 inches	N.D. <.30
S11 Alumni Hall	10/12/2010	S10	Alumni Hall	 West of exterior caulk SW joint West side of Bldg. 	Soil S10 3-6 inches	0.580
1011	10/12/2010	S11	Alumni Hall	 South of exterior caulk SW joint West side of Bldg. 	Soil S11 3-6 inches	0.710
S12 Alumni Hall	10/12/2010	S12	Alumni Hall	Below exterior caulk SW joint West side of Bldg.	Soil S12 10-18 inches	0.440

BRL = below laboratory reporting limits ND = Not Detected

ATTACHMENT A PHOTO IDENTIFICATION OF SOURCE MATERIAL COLLECTED



Exterior Building Expansion Joint Caulk



Interior Concrete Block Building Expansion Joint Caulk



Interior Brick Building Expansion Joint Caulk



Interior Window Caulk and Glazing



Exterior Window Caulk and Glazing

ATTACHMENT B PHOTO IDENTIFICATION OF PAINT REMOVAL TRIAL



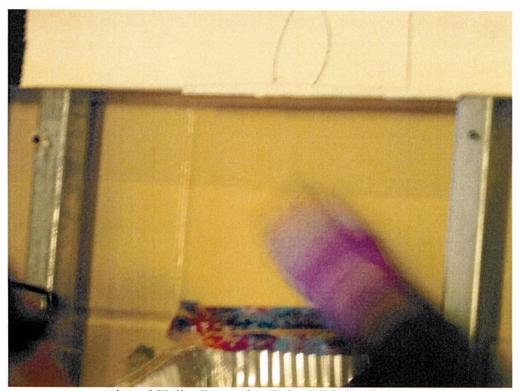
Alumni Hall - Paint Removed With Chisel



Alumni Hall - Removing Paint with Utility Knife



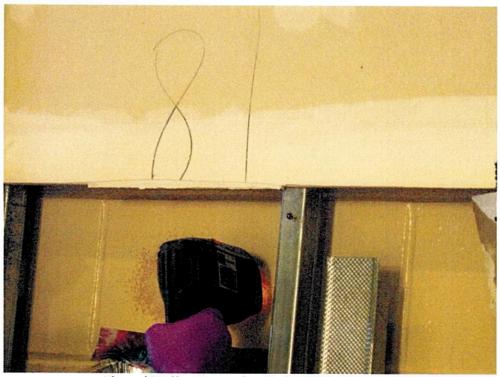
Alumni Hall – Utility Knife Paint Removal Area



Alumni Hall – Removing Paint With Sand Paper



Alumni Hall - Sand Paper Paint Removal Area



Alumni Hall - Removing Paint With Heat Gun



Alumni Hall – Heat Gun Paint Removal Area



Rm. 117 Lounge - Paint removed With Chisel



Rm. 117 Lounge - Sand Paper Paint Removal Area



Rm. 117 Lounge - Utility Knife Paint Removal Area



Rm. 117 Lounge - Heat Gun Paint Removal Area

ATTACHMENT C PHOTO IDENTIFICATION OF POROUS MATERIALS COLLECTED



Wood Window Sill and Concrete Block Adjacent to Caulk

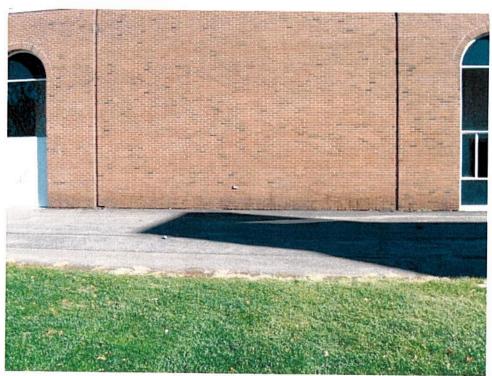


Brick Adjacent to Building Joint Caulk



Asphalt Beneath Building Expansion Joint Caulk

ATTACHMENT D PHOTO IDENTIFICATION OF SOIL AND GRAVEL SAMPLES COLLECTED



Alumni Hall West Side



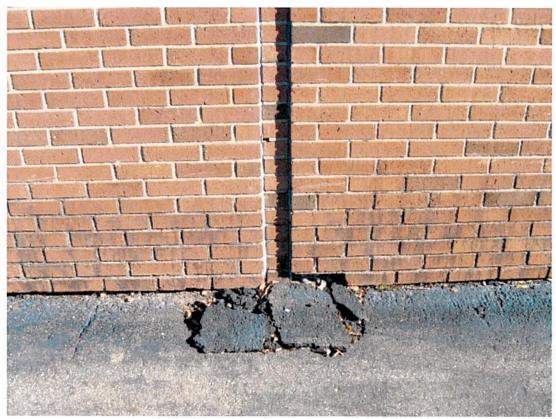
Alumni Hall North Side



Soil Strip at Footer Base (Typical)



Asphalt/Gravel/Soil Sample Location North side



1' X 1' Soil Sample Location West Side

APPENDIX I LABORATORY ANALYTICAL REPORTS



80 Lupes Drive Stratford, CT 06615

Tel: (203) 377-9984 Fax: (203) 377-9952 e-mail: cet1@cetlabs.com

Client:

Mr. Chris Hudacek Facility Support Services 2685 State Street Hamden, CT 06517

Analytical Report

CET # 10070080

Report Date: July 13, 2010

Client Project: QU Student Center, Hamden

Client Project #: 32510

Connecticut Laboratory Certification PH 0116 Massachusetts Laboratory Certification M-CT903 Rhode Island Laboratory Certification 199 1 of 3 Project: QU Student Center, Hamden

SAMPLE SUMMARY:

This report contains analytical data associated with the following samples only:

CETID	Client Sample ID	Matrix	I Call I B
AE44142	01		Collection Date
AE44143		Solid	7/5/2010
	02	Solid	7/5/2010
AE44144	03	Solid	
AE44145	04	1	7/5/2010
AE44146	05	Solid	7/5/2010
		Solid	7/5/2010
AE44147	06	Solid	7/5/2010
AE44148	07	Solid	
		Solid	7/5/2010

Sample temperature upon receipt was 3.1 degrees C

PREP ANALYSIS:

Soxhlet Extraction [EPA 3540C]

Client ID	01	02	03	04	05
CET ID	AE44142	AE44143	AE44144	AE44145	05
Date Analyzed	7/7/2010	7/7/2010	7/7/2010	7/7/2010	AE44146

Soxhlet Extraction [EPA 3540C]

		00100
Client ID	06	07
CET ID	AE44147	AE44148
Date Analyzed	7/7/2010	7/7/2010
	1 . 1 4010	1 1/1/2010

ANALYSIS:

EPA 8082 PCBs [EPA 8082] Units: mg/kg (Dry Wt)

Client ID	01	02	g/kg (Dry W	1	
CET ID Date Analyzed PCB-1268	AE44142 7/13/2010 ND < 1.3	AE44143 7/12/2010 ND < 8.3	AE44144 7/12/2010 ND < 2500	AE44145 7/12/2010 ND < 13	05 AE44146 7/13/2010 ND < 0.50

EPA 8082 PCBs [EPA 8082] Units: mg/kg (Dry Wt)

12212 0002	omis: mg
06	07
AE44147 7/12/2010 ND < 1250	AE44148 7/13/2010 ND < 1.0
	06 AE44147 7/12/2010

Project: QU Student Center, Hamden

EPA 8082 PCBs [EPA 8082] Units: mg/kg (Dry Wt)

Cheffe ID	01	02		4)	W. C. J. Service
CET ID Date Analyzed Dilution PCB-1016 PCB-1221 PCB-1232 PCB-1242 PCB-1248 PCB-1254 PCB-1260 ICMX (Surr 1) DCB (Surr 2)	AE44142 7/13/2010 5.0 ND < 1.3 ND < 1.3 ND < 1.3 ND < 1.3 ND < 1.3 SO < 1.3 SO < 1.3	AE44143 7/12/2010 33.0 ND < 8.3 ND < 8.3 ND < 8.3 ND < 8.3 ND < 8.3 AD < 8.3 ND < 8.3 ND < 8.3	03 AE44144 7/12/2010 10000.0 ND < 2500 + +	04 AE44145 7/12/2010 50.0 ND < 13 ND < 13	05 AE44146 7/13/2010 2.0 ND < 0.50

EPA 8082 PCBs [EPA 8082] Units: mg/kg (Dry Wt)

Client ID	05 [EPA 8082	J Omis: mg
	06	07
CET ID	AE44147	AE44148
Date Analyzed	7/12/2010	7/13/2010
Dilution	5000.0	4.0
PCB-1016	ND < 1250	10000000
PCB-1221	ND < 1250	ND < 1.0
PCB-1232		ND < 1.0
PCB-1242	ND < 1250	ND < 1.0
PCB-1248	ND < 1250	ND < 1.0
PCB-1254	ND < 1250	ND < 1.0
	55000E	ND < 1.0
PCB-1260	ND < 1250	ND < 1.0
TCMX (Surr 1)	+	52
DCB (Surr 2)	+	64

+Surrogate diluted out.

Assumed 100% Total Solids for all samples.

Sincerely,

David Ditta

Laboratory Director

Report Comments.

- 1. ND is None Detected at the specified detection limit.
- 2. All analyses were performed in house unless a Reference Laboratory is listed.
- 3. Samples will be disposed of 30 days after the report date.
- 4. Sample Result Flags:
 - E The result is estimated, above the calibration range.
 - H The surrogate recovery is above the control limits.
 - L The surrogate recovery is below the control limits.
 - B The compound was detected in the laboratory blank.
 - P The Relative Percent Difference (RPD) of dual column analyses exceeds 40%.
 - D The RPD between the sample and the sample duplicate is high. Sample homogeneity may be a problem.

Project#: 32510 Cet#: 10070080 Project: QU Student Center, Hamden

CHAIN OF CUSTODY RECORD COMPLETE INMONISTRIL ITSME, MIC COMPLETE COMPLETE INMONISTRIL ITSME, MIC COMPLETE COMPLET
Volatili SPDF DEVELOR DESCRIPTION SPLP Conoctor(s): Conoctor(s): SPLP Conoctor(s): Conoctor(s): Conoctor(s): Conoctor(s): Conoctor(s): Conoctor(s): SPLP Conoctor(s): Cono

Report Date: 20-Aug-10 12:51



☑ Final Report☐ Re-Issued Report

□ Revised Report

Laboratory Report

Facility Support Services, LLC 2685 State Street Hamden, CT 06517 Attn: Steve Daniels

Project: Quinnipiac University, CT

Project #: 32510

Laboratory ID	Client Sample ID	Matrix	Date Sampled	Date Received
SB16704-01	32510081301	Brick	13-Aug-10 10:30	16-Aug-10 16:15
SB16704-02	32510081302	Soil	13-Aug-10 10:50	16-Aug-10 16:15
SB16704-03	32510081303	Asphalt	13-Aug-10 10:55	16-Aug-10 16:15
SB16704-04	32510081304	Soil	13-Aug-10 11:05	16-Aug-10 16:15
SB16704-05	32510081305	Asphalt	13-Aug-10 11:05	16-Aug-10 16:15
SB16704-06	32510081306	Gravel	13-Aug-10 11:20	16-Aug-10 16:15
SB16704-07	32510081307	Soil	13-Aug-10 11:25	16-Aug-10 16:15
SB16704-08	32510081308	Gravel	13-Aug-10 11:30	16-Aug-10 16:15
SB16704-09	32510081309	Soil	13-Aug-10 11:35	16-Aug-10 16:15
SB16704-10	32510081310	Gravel	13-Aug-10 11:40	16-Aug-10 16:15
SB16704-11	32510081311	Soil	13-Aug-10 11:45	16-Aug-10 16:15
SB16704-12	32510081312	Asphalt	13-Aug-10 11:50	16-Aug-10 16:15
SB16704-13	32510081313	Asphalt	13-Aug-10 11:55	16-Aug-10 16:15
SB16704-14	32510081314	Caulking	13-Aug-10 13:50	16-Aug-10 16:15
SB16704-15	32510081315	Caulking	13-Aug-10 13:55	16-Aug-10 16:15
SB16704-16	32510081316	Window Glazing	13-Aug-10 14:05	16-Aug-10 16:15
SB16704-17	32510081317	Window Glazing	13-Aug-10 14:15	16-Aug-10 16:15
SB16704-18	32510081318	Caulking	13-Aug-10 14:20	16-Aug-10 16:15
SB16704-19	32510081319	Caulking	13-Aug-10 14:25	16-Aug-10 16:15
SB16704-20	32510081320	Caulking	13-Aug-10 14:40	16-Aug-10 16:15
SB16704-21	32510081321	Window Glazing	13-Aug-10 14:55	16-Aug-10 16:15
SB16704-22	32510081322	Window Glazing	13-Aug-10 15:10	16-Aug-10 16:15
SB16704-23	32510081323	Caulking	13-Aug-10 15:15	16-Aug-10 16:15
SB16704-24	32510081324	Window Glazing	13-Aug-10 15:15	16-Aug-10 16:15

I attest that the information contained within the report has been reviewed for accuracy and checked against the quality control requirements for each method. These results relate only to the sample(s) as received.

All applicable NELAC requirements have been met.

Massachusetts # M-MA138/MA1110 Connecticut # PH-0777 Florida # E87600/E87936 Maine # MA138 New Hampshire # 2538 New Jersey # MA011/MA012 New York # 11393/11840 Pennsylvania # 68-04426/68-02924 Rhode Island # 98 USDA # S-51435 Vermont # VT-11393



Authorized by:

Hanibal C. Tayeh, Ph.D. President/Laboratory Director

Technical Reviewer's Initial:



Spectrum Analytical holds certification in the State of New York for the analytes as indicated with an X in the "Cert." column within this report. Please note that the State of New York does not offer certification for all analytes.

Please note that this report contains 30 pages of analytical data plus Chain of Custody document(s). When the Laboratory Report is indicated as revised, this report supersedes any previously dated reports for the laboratory ID(s) referenced above. Where this report identifies subcontracted analyses, copies of the subcontractor's test report are available upon request. This report may not be reproduced, except in full, without written approval from Spectrum Analytical, Inc.

Spectrum Analytical, Inc. is a NELAC accredited laboratory organization and meets NELAC testing standards. Use of the NELAC logo however does not insure that Spectrum is currently accredited for the specific method or analyte indicated. Please refer to our "Quality" web page at www.spectrum-analytical.com for a full listing of our current certifications and fields of accreditation. States in which Spectrum Analytical, Inc. holds NELAC certification are New York, New Hampshire, New Jersey and Florida. All analytical work for Volatile Organic and Air analysis are transferred to and conducted at our 830 Silver Street location (NY-11840, FL-E87936 and NJ-MA012).

Please contact the Laboratory or Technical Director at 800-789-9115 with any questions regarding the data contained in this laboratory report.

CASE NARRATIVE:

The sample temperature upon receipt by Spectrum Analytical courier was recorded as 5.4 degrees Celsius. The samples were transported on ice to the laboratory facility and the temperature was recorded at 1.3 degrees Celsius upon receipt at the laboratory. Please refer to the Chain of Custody for details specific to sample receipt times.

An infrared thermometer with a tolerance of +/- 2.0 degrees Celsius was used immediately upon receipt of the samples.

If a Matrix Spike (MS), Matrix Spike Duplicate (MSD) or Duplicate (DUP) was not requested on the Chain of Custody, method criteria may have been fulfilled with a source sample not of this Sample Delivery Group.

Required site-specific Matrix Spike/Matrix Spike Duplicate (MS/MSD) must be requested by the client and sufficient sample must be submitted for the additional analyses. Samples submitted with insufficient volume/weight will not be analyzed for site specific MS/MSD, however a batch MS/MSD may be analyzed from a non-site specific sample.

CTDEP has published a list of analytical methods which provides a series of recommended protocols for the acquisition, analysis and reporting of analytical data in support of decisions being made utilizing the Reasonable Confidence Protocol (RCP). "Reasonable Confidence" can be established only for those methods published by the CTDEP in the RCP guidelines. The compounds and/or elements reported were specifically requested by the client on the Chain of Custody and in some cases may not include the full analyte list as defined in the method.

The CTDEP RCP requests that "all non-detects and all results below the reporting limit are reported as ND (Not Detected at the Specified Reporting Limit)". All non-detects and all results below the reporting limit are reported as "BRL" (Below the Reporting Limit) in this report.

If no reporting limits were specified or referenced on the chain-of-custody the laboratory's practical quantitation limits were applied.

Tetrachloro-m-xylene is recommended as a surrogate by the CTDEP RCP for the following SW846 Methods 8081, 8082 and 8151. Spectrum Analytical, Inc. uses Tetrachloro-m-xylene as the Internal Standard for these methods and Dibromooctaflourobiphenyl as the surrogate.

See below for any non-conformances and issues relating to quality control samples and/or sample analysis/matrix.

SW846 8082

Spikes:

1017532-MS1

Source: SB16704-09

The RPD and/or percent recovery for this QC spike sample cannot be accurately calculated due to the high concentration of analyte inherent in the sample.

Aroclor-1260 Aroclor-1260 [2C]

1017532-MSD1

Source: SB16704-09

The RPD and/or percent recovery for this QC spike sample cannot be accurately calculated due to the high concentration of analyte inherent in the sample.

Aroclor-1260 Aroclor-1260 [2C]

Duplicates:

1017533-DUP1

Source: SB16704-13

Visual evaluation of the sample indicates the RPD is above the control limit due to a non-homogeneous sample matrix.

Aroclor-1254 Aroclor-1254 [2C]

SW846 8082

Samples:

SB16704-01

32510081301

The concentration indicated for this analyte is an estimated value. This value is considered an estimate (CLP E-flag).

Aroclor-1254 Aroclor-1260

SB16704-01RE1

32510081301

Sample dilution required for high concentration of target analytes to be within the instrument calibration range.

The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.

4,4-DB-Octafluorobiphenyl (Sr) [2C]

Decachlorobiphenyl (Sr)

Decachlorobiphenyl (Sr) [2C]

SB16704-02

32510081302

The concentration indicated for this analyte is an estimated value. This value is considered an estimate (CLP E-flag).

Aroclor-1254 [2C]

Aroclor-1260 [2C]

The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.

Decachlorobiphenyl (Sr)

Decachlorobiphenyl (Sr) [2C]

SB16704-02RE1

32510081302

Sample dilution required for high concentration of target analytes to be within the instrument calibration range.

The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.

4,4-DB-Octafluorobiphenyl (Sr)

4,4-DB-Octafluorobiphenyl (Sr) [2C]

Decachlorobiphenyl (Sr)

Decachlorobiphenyl (Sr) [2C]

SB16704-07

32510081307

The concentration indicated for this analyte is an estimated value. This value is considered an estimate (CLP E-flag).

Aroclor-1254 [2C]

SB16704-07RE1

32510081307

Sample dilution required for high concentration of target analytes to be within the instrument calibration range.

SB16704-14

32510081314

The concentration indicated for this analyte is an estimated value. This value is considered an estimate (CLP E-flag).

Aroclor-1254 [2C]

Aroclor-1260 [2C]

The surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interference's.

Decachlorobiphenyl (Sr)

SW846 8082

Samples:

SB16704-14

32510081314

The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.

Decachlorobiphenyl (Sr) [2C]

SB16704-14RE1

32510081314

Sample dilution required for high concentration of target analytes to be within the instrument calibration range.

The surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interference's.

4,4-DB-Octafluorobiphenyl (Sr)

4,4-DB-Octafluorobiphenyl (Sr) [2C]

Decachlorobiphenyl (Sr)

Decachlorobiphenyl (Sr) [2C]

SB16704-15

32510081315

The concentration indicated for this analyte is an estimated value. This value is considered an estimate (CLP E-flag).

Aroclor-1254 [2C]

Aroclor-1260 [2C]

The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.

Decachlorobiphenyl (Sr)

Decachlorobiphenyl (Sr) [2C]

SB16704-15RE1

32510081315

Sample dilution required for high concentration of target analytes to be within the instrument calibration range.

The surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interference's.

4,4-DB-Octafluorobiphenyl (Sr)

4,4-DB-Octafluorobiphenyl (Sr) [2C]

Decachlorobiphenyl (Sr)

Decachlorobiphenyl (Sr) [2C]

SB16704-17

32510081317

The concentration indicated for this analyte is an estimated value. This value is considered an estimate (CLP E-flag).

Aroclor-1254 [2C]

SB16704-17RE1

32510081317

Sample dilution required for high concentration of target analytes to be within the instrument calibration range.

SB16704-18

32510081318

The concentration indicated for this analyte is an estimated value. This value is considered an estimate (CLP E-flag).

Aroclor-1254 [2C]

Aroclor-1260 [2C]

The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.

Decachlorobiphenyl (Sr)

Decachlorobiphenyl (Sr) [2C]

SB16704-18RE1

32510081318

SW846 8082

Samples:

SB16704-18RE1

32510081318

Sample dilution required for high concentration of target analytes to be within the instrument calibration range.

The surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interference's.

4,4-DB-Octafluorobiphenyl (Sr)

4,4-DB-Octafluorobiphenyl (Sr) [2C]

Decachlorobiphenyl (Sr)

Decachlorobiphenyl (Sr) [2C]

SB16704-19

32510081319

The concentration indicated for this analyte is an estimated value. This value is considered an estimate (CLP E-flag).

Aroclor-1254 [2C]

Aroclor-1260 [2C]

The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.

Decachlorobiphenyl (Sr)

SB16704-19RE1

32510081319

Sample dilution required for high concentration of target analytes to be within the instrument calibration range.

The surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interference's.

4,4-DB-Octafluorobiphenyl (Sr)

4,4-DB-Octafluorobiphenyl (Sr) [2C]

Decachlorobiphenyl (Sr)

Decachlorobiphenyl (Sr) [2C]

SB16704-21

32510081321

The Reporting Limit has been raised to account for matrix interference.

SB16704-22

32510081322

The Reporting Limit has been raised to account for matrix interference.

SB16704-23

32510081323

The concentration indicated for this analyte is an estimated value. This value is considered an estimate (CLP E-flag).

Aroclor-1254

SB16704-23RE1

32510081323

Sample dilution required for high concentration of target analytes to be within the instrument calibration range.

SB16704-24

32510081324

The Reporting Limit has been raised to account for matrix interference.

The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.

Decachlorobiphenyl (Sr)

<u>Sample Identification</u> 32510081301 SB16704-01			Client Project # 32510					ection Date/Time -Aug-10 10:30		Received 16-Aug-10		
CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Semivolati	ile Organic Compounds by GC											
	nated Biphenyls by SW846 8082 by method SW846 3540C											
12674-11-2	Aroclor-1016	BRL		μg/kg	65.9	1	SW846 8082	17-Aug-10	18-Aug-10	TG	1017533	X
11104-28-2	Aroclor-1221	BRL		µg/kg	65.9	1		,				×
11141-16-5	Aroclor-1232	BRL		μg/kg	65.9	1				**	*	X
53469-21-9	Aroclor-1242	BRL		µg/kg	65.9	1					*	X
12672-29-6	Aroclor-1248	BRL		μg/kg	65.9	1	*		*	W.		X
11097-69-1	Aroclor-1254	124,000	E	μg/kg	65.9	1			**		*	×
11096-82-5	Aroclor-1260	56,800	E	μg/kg	65.9	1			н	35		X
37324-23-5	Aroclor-1262	BRL		µg/kg	65.9	1				*		X
11100-14-4	Aroclor-1268	BRL		μg/kg	65.9	1		н	in		**	Х
Surrogate r	recoveries:											
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr)	61			30-150 %		н	800	**	*		
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr) [2C]	85			30-150 %		2 10 1	v	*	•		
2051-24-3	Decachlorobiphenyl (Sr)	147			30-150 %		200.0		25.7			
2051-24-3	Decachlorobiphenyl (Sr) [2C]	147			30-150 %			**	и.	#6	14	
	is of Polychlorinated Biphenyls by by method SW846 3540C	y SW846 8082	g GS1									
12674-11-2	Aroclor-1016	BRL		µg/kg	6590	100	SW846 8082	17-Aug-10	19-Aug-10	TG	1017533	X
11104-28-2	Aroclor-1221	BRL		µg/kg	6590	100			*			Х
11141-16-5	Aroclor-1232	BRL		µg/kg	6590	100		**		н	30	X
53469-21-9	Aroclor-1242	BRL		µg/kg	6590	100		Si	-			X
12672-29-6	Aroclor-1248	BRL		µg/kg	6590	100		7	**	"		Х
11097-69-1	Aroclor-1254	313,000		μg/kg	6590	100	м	.m	34		*	×
11096-82-5	Aroclor-1260	72,400		µg/kg	6590	100	W	*			**	X
37324-23-5	Aroclor-1262	BRL		µg/kg	6590	100						Х
11100-14-4	Aroclor-1268	BRL		µg/kg	6590	100	*	**	38	800	н	X
Surrogate re	ecoveries:									3000-1-12-90		
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr)	150			30-150 %		•			**	"	
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr) [2C]	200	S06		30-150 %			*			9.	
2051-24-3	Decachlorobiphenyl (Sr)	350	S06		30-150 %		w	u	×	н	W	
2051-24-3	Decachlorobiphenyl (Sr) [2C]	300	\$06		30-150 %		**		in	"	*	

32510081 SB16704			Client Project # 32510			Matrix Soil	S-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	Collection Date/Time 13-Aug-10 10:50			Received 16-Aug-10		
CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.	
Semivolat	ile Organic Compounds by GC												
	inated Biphenyls by SW846 8082 by method SW846 3540C												
12674-11-2	Aroclor-1016	BRL		µg/kg dry	21.1	1	SW846 8082	17-Aug-10	18-Aug-10	TG	1017532	×	
11104-28-2	Aroclor-1221	BRL		μg/kg dry	21,1	1					18	×	
11141-16-5	Aroclor-1232	BRL		µg/kg dry	21.1	1	**		N.	*		×	
53469-21-9	Aroclor-1242	BRL		µg/kg dry	21.1	1			**	*		×	
12672-29-6	Aroclor-1248	BRL		µg/kg dry	21.1	1	9.		н	10.0	200	X	
11097-69-1	Aroclor-1254	43,400	E	µg/kg dry	21.1	1	н		и	#C		×	
11096-82-5	Aroclor-1260	44,600	E	µg/kg dry	21.1	1	*		**			×	
37324-23-5	Aroclor-1262	BRL		µg/kg dry	21.1	1			**	75		×	
11100-14-4	Aroclor-1268	BRL		µg/kg dry	21.1	1	*	5H 3			**	X	
Surrogate	recoveries:												
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr)	92			30-150 %					8.5			
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr) [2C]	85			30-150 %		н	(H	(m) (*		
2051-24-3	Decachlorobiphenyl (Sr)	180	S04		30-150 %		W		н	н			
2051-24-3	Decachlorobiphenyl (Sr) [2C]	284	S04		30-150 %					. 10	**		
	is of Polychlorinated Biphenyls by by method SW846 3540C	y SW846 8082	GS1										
12674-11-2		BRL		μg/kg dry	2110	100	SW846 8082	17-Aug-10	19-4119-10	TG	1017532	Х	
11104-28-2	Aroclor-1221	BRL		μg/kg dry	2110	100	"	n - / tag - 10	"		"	X	
11141-16-5	Aroclor-1232	BRL		µg/kg dry	2110	100						X	
53469-21-9	Aroclor-1242	BRL		μg/kg dry	2110	100		19.				X	
12672-29-6	Aroclor-1248	BRL		µg/kg dry	2110	100	*		100	н	**	X	
11097-69-1	Aroclor-1254	219,000		µg/kg dry	2110	100	**			jw.		X	
11096-82-5	Aroclor-1260	134,000		μg/kg dry	2110	100	**	*			ж.	Х	
37324-23-5	Aroclor-1262	BRL		μg/kg dry	2110	100	*	-	**		н	X	
11100-14-4	Aroclor-1268	BRL		μg/kg dry	2110	100	*		-			X	

30-150 %

30-150 %

30-150 %

30-150 %

%

Surrogate recoveries:

[2C]
2051-24-3 Decachlorobiphenyl (Sr)

General Chemistry Parameters % Solids

10386-84-2 4,4-DB-Octafluorobiphenyl (Sr)

10386-84-2 4,4-DB-Octafluorobiphenyl (Sr)

2051-24-3 Decachlorobiphenyl (Sr) [2C]

300

200

500

500

91.2

S06

506

S06

S06

SM2540 G Mod. 17-Aug-10 17-Aug-10

1017507

<u>Sample Identification</u> 32510081303 SB16704-03				<u>nt Project #</u> 32510	Ł	Matrix Asphalt		lection Date 3-Aug-10 10		528	eceived Aug-10	
CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Semivolat	tile Organic Compounds by GC				11-00-11-00-1-							
	inated Biphenyls by SW846 8082 by method SW846 3540C											
12674-11-2	Aroclor-1016	BRL		µg/kg	237	1	SW846 8082	17-Aug-10	18-Aug-10	TG	1017533	×
11104-28-2	Aroclor-1221	BRL		µg/kg	237	1			**			×
11141-16-5	Aroclor-1232	BRL		µg/kg	237	1	36	*	*		W	X
53469-21-9	Aroclor-1242	BRL		µg/kg	237	1		•		**	**	×
12672-29-6	Aroclor-1248	BRL		μg/kg	237	1			38		25	X
11097-69-1	Aroclor-1254	1,610		µg/kg	237	1	**	×	iii	н	**	X
11096-82-5	Aroclor-1260	286		µg/kg	237	1	•		"		**	X
37324-23-5	Aroclor-1262	BRL		µg/kg	237	1				н	*	X
11100-14-4	Aroclor-1268	BRL		µg/kg	237	1	×		*	300	H	×
Surrogate	recoveries:											
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr)	62			30-150 %		"				15	
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr) [2C]	81			30-150 %			*	*	**	*	
2051-24-3	Decachlorobiphenyl (Sr)	80			30-150 %			*	*			
2051-24-3	Decachlorobiphenyl (Sr) [2C]	89			30-150 %		-				75	
32510081 SB16704-				t Project # 32510		<u>Matrix</u> Soil		ection Date -Aug-10 11			ceived Aug-10	
CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Semivolati	ile Organic Compounds by GC											
	hated Biphenyls by SW846 8082 by method SW846 3540C											
12674-11-2	Aroclor-1016	BRL		μg/kg dry	21.4	1	SW846 8082	17-Aug-10	18-Aug-10	TG	1017532	X
11104-28-2	Aroclor-1221	BRL		µg/kg dry	21.4	1	3.45					×
11141-16-5	Aroclor-1232	BRL		μg/kg dry	21.4	1	800	н		ж		×
53469-21-9	Aroclor-1242	BRL		μg/kg dry	21.4	1		,,	*			X
12672-29-6	Aroclor-1248	BRL		μg/kg dry	21.4	1	"			25	н	X
11097-69-1	Aroclor-1254	3,220		μg/kg dry	21.4	1		*		**		X
11096-82-5	Aroclor-1260	1,380		μg/kg dry	21.4	1	**	**	*	7	*	X
37324-23-5	Aroclor-1262	BRL		μg/kg dry	21.4	1			125	*	(40)	×
11100-14-4	Aroclor-1268	BRL		μg/kg dry	21.4	1		*		16		×
Surrogate r	recoveries:											-
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr)	64			30-150 %					н		
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr) [2C]	81			30-150 %				м	(H)	(H	
2051-24-3	Decachlorobiphenyl (Sr)	42			30-150 %			394	W 2			
2051-24-3	Decachlorobiphenyl (Sr) [2C]	72			30-150 %					н		
General C	hemistry Parameters											
	% Solids	93.1		%		1	SM2540 G Mod.	17-Aug-10	17-Aug-10	BD	1017507	

<u>Sample Identification</u> 32510081305 SB16704-05			nt Project 32510	<u>#</u>	<u>Matrix</u> Asphalt		lection Date 3-Aug-10 1		<u>Re</u> 16-			
CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Semivolat	tile Organic Compounds by GC											
	rinated Biphenyls by SW846 8082 by method SW846 3540C											
	Aroclor-1016	BRL		μg/kg	263	1	SW846 8082	17-Aug 10	18 Aug 10	TC	1017522	
11104-28-2		BRL		µg/kg	263	1	300040 0002	17-Aug-10	18-Aug-10 "	TG "	1017533	x X
11141-16-5	Aroclor-1232	BRL		μg/kg	263	1	ж.					X
53469-21-9	Aroclor-1242	BRL		µg/kg	263	1						X
12672-29-6	Aroclor-1248	BRL		μg/kg	263	1						X
11097-69-1	Aroclor-1254	7,210		μg/kg	263	1	*		4		18	X
11096-82-5	Aroclor-1260	BRL		µg/kg	263	1						×
37324-23-5	Aroclor-1262	BRL		μg/kg	263	1						×
11100-14-4	Aroclor-1268	BRL		µg/kg	263	1	*	-				×
Surrogate	recoveries:											1200
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr)	82			30-150 %		*	*		60	39	
10386-84-2		76			30-150 %		*	*	н	-	*	
2051-24-3	Decachlorobiphenyl (Sr)	80			30-150 %							
2051-24-3	Decachlorobiphenyl (Sr) [2C]	94			30-150 %		**		(#)	0	**	
<u>Sample Identification</u> 32510081306 SB16704-06						<u>Matrix</u> Gravel	Collection Date/Time 13-Aug-10 11:20			Received 16-Aug-10		
CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Semivolati	le Organic Compounds by GC											
	nated Biphenyls by SW846 8082 by method SW846 3540C											
12674-11-2	Aroclor-1016	BRL		µg/kg	58.5	1	SW846 8082	17-Aug-10	18-Aug-10	TG	1017533	X
11104-28-2	Aroclor-1221	BRL		µg/kg	58.5	1		"	"			×
11141-16-5	Aroclor-1232	BRL		μg/kg	58.5	1		NO.	*	*	*	×
53469-21-9	Aroclor-1242	BRL		µg/kg	58.5	1	*					X
12672-29-6	Aroclor-1248	BRL		µg/kg	58.5	1	(M)	(196)	*			×
11097-69-1	Aroclor-1254	130		μg/kg	58.5	1		(10)			4	X
11096-82-5	Aroclor-1260	BRL		µg/kg	58.5	1	*				0.75	X
37324-23-5	Aroclor-1262	BRL		µg/kg	58.5	1			*	38		×
11100-14-4	Aroclor-1268	BRL		µg/kg	58.5	1	н	*				X
Surrogate r	ecoveries:					~anb=171.7120						
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr)	87			30-150 %			(39%)				
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr) [2C]	90			30-150 %		(#7)			*	*	
2051-24-3	Decachlorobiphenyl (Sr)	90			30-150 %		и.					
2051-24-3	Decachlorobiphenyl (Sr) [2C]	96			30-150 %		-	327			98	

Sample Identification 32510081307 SB16704-07			nt Project # 32510		<u>Matrix</u> Soil	(A)	Collection Date/Time 13-Aug-10 11:25			Received 16-Aug-10		
CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Semivolat	ile Organic Compounds by GC											
	inated Biphenyls by SW846 8082	1										
	by method SW846 3540C	200										
12674-11-2	0.000 AT ASSOCIATION	BRL		μg/kg dry	22.9	1	SW846 8082	00 000007 0000	18-Aug-10	TG	1017532	X
11104-28-2	Aroclor-1221	BRL		µg/kg dry	22.9	1	**				**	X
11141-16-5	Aroclor-1232	BRL		µg/kg dry	22.9	1		*			-	X
53469-21-9	Aroclor-1242	BRL		µg/kg dry	22.9	1	•			*		X
12672-29-6	Aroclor-1248	BRL		µg/kg dry	22.9	1	**	*	*	te	w	X
11097-69-1	Aroclor-1254	4,310	E	μg/kg dry	22.9	1	**	W	**		**	X
11096-82-5	Aroclor-1260	1,770		µg/kg dry	22.9	1	*			**		X
37324-23-5	Aroclor-1262	BRL		µg/kg dry	22.9	1		*			*	×
11100-14-4	Aroclor-1268	BRL		µg/kg dry	22.9	1	W.	*	W			×
Surrogate r	recoveries:											
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr)	84			30-150 %		4				*	
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr) [2C]	80			30-150 %		*	**	**	н	*	
2051-24-3	Decachlorobiphenyl (Sr)	84			30-150 %							
2051-24-3	Decachlorobiphenyl (Sr) [2C]	96			30-150 %		**	**			90	
	is of Polychlorinated Biphenyls b by method SW846 3540C	y SW846 8082	GS1									
12674-11-2	Aroclor-1016	BRL		µg/kg dry	115	5	SW846 8082	17-Aug-10	19-Aug-10	TG	1017532	X
11104-28-2	Aroclor-1221	BRL		μg/kg dry	115	5	"	" ring to	"		"	X
11141-16-5	Aroclor-1232	BRL		µg/kg dry	115	5	**	н.	н			
53469-21-9	Aroclor-1242	BRL		μg/kg dry	115	5	**	W.				X
12672-29-6	Aroclor-1248	BRL		μg/kg dry	115	5						×
11097-69-1	Aroclor-1254	5,980		µg/kg dry	115	5			***			X
11096-82-5	Aroclor-1260	1,740				5	70 M		**	н	н	X
37324-23-5	Aroclor-1262			μg/kg dry	115			190		,,		X
11100-14-4		BRL		μg/kg dry	115	5	н	н				X
	Aroclor-1268	BRL		µg/kg dry	115	5			*			X
Surrogate re												
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr)	55			30-150 %		н			*		
10386-84-2	[2C]	77			30-150 %		*		н		**	
2051-24-3	Decachlorobiphenyl (Sr)	83			30-150 %					æ	×	
2051-24-3	Decachlorobiphenyl (Sr) [2C]	105			30-150 %					*	**	
General Cl	nemistry Parameters											
	% Solids	81.5		%		1	SM2540 G Mod.	17-Aug-10	17-Aug-10	BD	1017508	

Sample Identification 32510081308 SB16704-08				nt Project # 32510	<u> </u>	<u>Matrix</u> Gravel		Collection Date/Time 13-Aug-10 11:30			Received 16-Aug-10		
CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.	
Semivola	tile Organic Compounds by GC												
	rinated Biphenyls by SW846 8082 d by method SW846 3540C												
12674-11-2	Aroclor-1016	BRL		µg/kg	61.0	1	SW846 8082	17-Aug-10	18-Aug-10	TG	1017533	×	
11104-28-2	Aroclor-1221	BRL		µg/kg	61.0	1	*				"	X	
11141-16-5	Aroclor-1232	BRL		μg/kg	61.0	1	ж	н		н	R.	X	
53469-21-9	Aroclor-1242	BRL		µg/kg	61.0	1	**	**	*	**	*	X	
12672-29-6	Aroclor-1248	BRL		μg/kg	61.0	1		**	*			X	
11097-69-1	Aroclor-1254	324		μg/kg	61.0	1	*	*	w	76	**	X	
11096-82-5	Aroclor-1260	BRL		μg/kg	61.0	1						X	
37324-23-5	Aroclor-1262	BRL		μg/kg	61.0	1	**	*	**	29	*	×	
11100-14-4	Aroclor-1268	BRL		μg/kg	61.0	1	и.	*	W			X	
Surrogate	recoveries:												
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr)	72			30-150 %			*			33.85		
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr) [2C]	78			30-150 %		(10)		*:	ж	*		
2051-24-3	Decachlorobiphenyl (Sr)	83			30-150 %						**		
2051-24-3	Decachlorobiphenyl (Sr) [2C]	89			30-150 %				100	*			
Comple L	dantification												
32510081	dentification		Clien	t Project #		Matrix	Coll	ection Date	Time	Re	ceived		
SB16704			32510			Soil		13-Aug-10 11:35			16-Aug-10		
CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.	
Semivolati	ile Organic Compounds by GC												
	inated Biphenyls by SW846 8082 by method SW846 3540C												
12674-11-2	Aroclor-1016	BRL		µg/kg dry	23.6	1	SW846 8082	17-Aug-10	18-Aug-10	TG	1017532	×	
11104-28-2	Aroclor-1221	BRL		µg/kg dry	23.6	1	,		"		"	X	
11141-16-5	Aroclor-1232	BRL		μg/kg dry	23.6	1		**		п		X	
53469-21-9	Aroclor-1242	BRL		μg/kg dry	23.6	1		-		*		X	
12672-29-6	Aroclor-1248	BRL		μg/kg dry	23.6	1					325	×	
11097-69-1	Aroclor-1254	3,010		μg/kg dry	23.6	1	н	**	*			×	
11096-82-5	Aroclor-1260	760		μg/kg dry	23.6	1	**	w	*		*	×	
37324-23-5	Aroclor-1262	BRL		μg/kg dry	23.6	1					.8	X	
11100-14-4	Aroclor-1268	BRL		μg/kg dry	23.6	1	*	**	*	н	W	X	
Surrogate r	recoveries:												
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr)	63			30-150 %								
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr) [2C]	80			30-150 %		8.	25	*.		w		
2051-24-3	Decachlorobiphenyl (Sr)	82			30-150 %		*	W	W.	-			
2051-24-3	Decachlorobiphenyl (Sr) [2C]	91			30-150 %			*					
	Decachlorobiphenyl (Sr) [2C] hemistry Parameters	91			30-150 %		*	*	•				

Sample Identification 32510081310 SB16704-10			Clie	nt Project # 32510	!	Matrix Grave		Collection Date/Time 13-Aug-10 11:40				Received 16-Aug-10		
CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.		
Semivola	tile Organic Compounds by GC													
	rinated Biphenyls by SW846 8082 d by method SW846 3540C													
	Aroclor-1016	BRL		μg/kg	55.5	1	SW846 8082	17-Aug-10	18-Aug-10	TG	1017533	8 X		
11104-28-2	Aroclor-1221	BRL		μg/kg	55.5	1	"	"	10-Aug-10		"	, ×		
11141-16-5	Aroclor-1232	BRL		μg/kg	55.5	1			**			X		
53469-21-9	Aroclor-1242	BRL		μg/kg	55.5	1					34	X		
12672-29-6	Aroclor-1248	BRL		μg/kg	55.5	1	м	14		,		X		
11097-69-1	Aroclor-1254	158		µg/kg	55.5	1						X		
11096-82-5	Aroclor-1260	BRL		µg/kg	55.5	1			7.00		*	×		
37324-23-5	Aroclor-1262	BRL		µg/kg	55.5	1	*		**	н		×		
11100-14-4	Aroclor-1268	BRL		µg/kg	55.5	1	*					X		
Surrogate	recoveries:													
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr)	80			30-150 %				э	**	**			
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr) [2C]	80			30-150 %		*		*	м				
2051-24-3	Decachlorobiphenyl (Sr)	94			30-150 %			*	*		16			
2051-24-3	Decachlorobiphenyl (Sr) [2C]	92			30-150 %		*		*		iii			
<u>Sample Identification</u> 32510081311 SB16704-11					Matrix Soil		Collection Date/Time 13-Aug-10 11:45			Received 16-Aug-10				
CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.		
Semivolat	ile Organic Compounds by GC													
	inated Biphenyls by SW846 8082 by method SW846 3540C													
12674-11-2	ALONG PARAMETERS AND	BRL		μg/kg dry	22.3	1	SW846 8082	17-Aug-10	18-Aug-10	TG	1017532	Х		
11104-28-2	Aroclor-1221	BRL		μg/kg dry	22.3	1		"	#		"	×		
11141-16-5	Aroclor-1232	BRL		μg/kg dry	22.3	1	*	*	*			×		
53469-21-9	Aroclor-1242	BRL		μg/kg dry	22.3	1		*	200	9.		X		
12672-29-6	Aroclor-1248	BRL		µg/kg dry	22.3	1		*	**		194	X		
11097-69-1	Aroclor-1254	2,570		µg/kg dry	22.3	1	ü					X		
11096-82-5	Aroclor-1260	597		µg/kg dry	22.3	1		29			34	X		
37324-23-5	Aroclor-1262	BRL		µg/kg dry	22.3	1		94	3003	н		X		
11100-14-4	Aroclor-1268	BRL		µg/kg dry	22.3	1	**				"	X		
Surrogate r	ecoveries:													
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr)	96			30-150 %			*	*		×			
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr) [2C]	78			30-150 %		*	*			,			
2051-24-3	Decachlorobiphenyl (Sr)	74			30-150 %				**		*			
2051-24-3	Decachlorobiphenyl (Sr) [2C]	94			30-150 %		м.	*	*					
General Cl	hemistry Parameters			2500										
	% Solids	82.5		%		1 :	SM2540 G Mod.	17-Aug-10 1	7-Aug-10	BD 1	1017508			

Sample Io 32510081 SB16704				t Project # 32510	ŧ	<u>Matrix</u> Asphalt		ection Date -Aug-10 11			ceived Aug-10	
CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Semivolat	ile Organic Compounds by GC	702	The same of the sa									
Polychlori	inated Biphenyls by SW846 8082											
	by method SW846 3540C											
12674-11-2	Aroclor-1016	BRL		µg/kg	332	1	SW846 8082	17-Aug-10	19-Aug-10	TG	1017533	X
11104-28-2	Aroclor-1221	BRL		µg/kg	332	1	*				*	X
11141-16-5	Aroclor-1232	BRL		µg/kg	332	1	н.	*	*	1.99	90	X
53469-21-9	Aroclor-1242	BRL		µg/kg	332	1	н	*		н	HS	X
12672-29-6	Aroclor-1248	BRL		µg/kg	332	1	*					×
11097-69-1	Aroclor-1254	34,800		µg/kg	332	1	16.	**	**	34	н	X
11096-82-5	Aroclor-1260	5,070		µg/kg	332	1	**		-			X
37324-23-5	Aroclor-1262	BRL		µg/kg	332	1	15	**	**	**		×
11100-14-4	Aroclor-1268	BRL		µg/kg	332	1	•	**	ж			X
Surrogate i	recoveries:											
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr)	77			30-150 %		"	•	**			
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr) [2C]	83			30-150 %		н					
2051-24-3	Decachlorobiphenyl (Sr)	91			30-150 %		W)	W.	н		**	
2051-24-3	Decachlorobiphenyl (Sr) [2C]	97			30-150 %		"					
Sample Id	lentification											
32510081			Client	Project #		<u>Matrix</u>	Colle	ection Date/	Time		ceived	
SB16704-			3	2510		Asphalt	13	-Aug-10 11	:55	16-7	Aug-10	
CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Semivolati	lle Organic Compounds by GC											
	nated Biphenyls by SW846 8082 by method SW846 3540C											
	Aroclor-1016	BRL		µg/kg	249	1	SW846 8082	17-Aug-10	19-Aug-10	TG	1017533	×
11104-28-2	AI 4004	DDI		16					- 53			
A. U. S. W. G. G. C.	Aroclor-1221	BRL		µg/kg	249	1	*		**	**	**	X
	Aroclor-1232	BRL		µg/kg µg/kg	249 249	1						×
11141-16-5				μg/kg								
11141-16-5 53469-21-9	Aroclor-1232	BRL		μg/kg μg/kg	249					*	н.	X X
11141-16-5 53469-21-9	Aroclor-1232 Aroclor-1242	BRL BRL BRL		μg/kg μg/kg μg/kg	249 249	1				*	н.	× × ×
11141-16-5 53469-21-9 12672-29-6	Aroclor-1232 Aroclor-1242 Aroclor-1248 Aroclor-1254	BRL BRL BRL 3,160		µg/kg µg/kg µg/kg µg/kg	249 249 249 249	1 1 1				*	н.	x x x
11141-16-5 53469-21-9 12672-29-6 11097-69-1	Aroclor-1232 Aroclor-1242 Aroclor-1248 Aroclor-1254 Aroclor-1260	BRL BRL BRL 3,160 BRL		µg/kg µg/kg µg/kg µg/kg µg/kg	249 249 249 249 249	1 1 1			о п н	*	н.	× × × ×
11141-16-5 53469-21-9 12672-29-6 11097-69-1 11096-82-5	Aroclor-1232 Aroclor-1242 Aroclor-1248 Aroclor-1254	BRL BRL BRL 3,160		µg/kg µg/kg µg/kg µg/kg	249 249 249 249	1 1 1 1			о п н	*	н.	x x x
11141-16-5 53469-21-9 12672-29-6 11097-69-1 11096-82-5 37324-23-5	Aroclor-1232 Aroclor-1242 Aroclor-1248 Aroclor-1254 Aroclor-1260 Aroclor-1262 Aroclor-1268	BRL BRL BRL 3,160 BRL BRL		ha/ka ha/ka ha/ka ha/ka ha/ka	249 249 249 249 249 249	1 1 1 1 1			о п н	*	н.	x x x x x
11141-16-5 53469-21-9 12672-29-6 11097-69-1 11096-82-5 37324-23-5 11100-14-4 Surrogate r	Aroclor-1232 Aroclor-1242 Aroclor-1248 Aroclor-1254 Aroclor-1260 Aroclor-1262 Aroclor-1268	BRL BRL BRL 3,160 BRL BRL		ha/ka ha/ka ha/ka ha/ka ha/ka	249 249 249 249 249 249	1 1 1 1 1			о п н	*	н.	x x x x x
11141-16-5 53469-21-9 12672-29-6 11097-69-1 11096-82-5 37324-23-5 11100-14-4 Surrogate r	Aroclor-1232 Aroclor-1242 Aroclor-1248 Aroclor-1254 Aroclor-1260 Aroclor-1262 Aroclor-1268 recoveries:	BRL BRL 3,160 BRL BRL BRL		ha/ka ha/ka ha/ka ha/ka ha/ka	249 249 249 249 249 249 249	1 1 1 1 1			о п н	*	н.	x x x x x
11141-16-5 53469-21-9 12672-29-6 11097-69-1 11096-82-5 37324-23-5 11100-14-4 Surrogate r 10386-84-2	Aroclor-1232 Aroclor-1242 Aroclor-1248 Aroclor-1254 Aroclor-1260 Aroclor-1262 Aroclor-1268 recoveries: 4,4-DB-Octafluorobiphenyl (Sr) 4,4-DB-Octafluorobiphenyl (Sr)	BRL BRL 3,160 BRL BRL BRL		ha/ka ha/ka ha/ka ha/ka ha/ka	249 249 249 249 249 249 249 30-150 %	1 1 1 1 1			о п н	*	н.	x x x x x

32510081	dentification 314			t Project	<u>#</u>	Matrix		lection Date	5 78853	2000	ceived	
SB16704	-14		2	32510		Caulking	g 1:	3-Aug-10 13	3:50	16-	Aug-10	
CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cer
Semivolat	ile Organic Compounds by GC											
	inated Biphenyls by SW846 8082	2										
Prepared	by method SW846 3540C											
12674-11-2	Aroclor-1016	BRL		µg/kg	209	1	SW846 8082	17-Aug-10	19-Aug-10	IMR	1017548	×
11104-28-2	Aroclor-1221	BRL		µg/kg	209	1		•	. 0	*		×
11141-16-5	Aroclor-1232	BRL		μg/kg	209	1	и.	4		*		>
53469-21-9	Aroclor-1242	BRL		µg/kg	209	1			*		**	×
12672-29-6	Aroclor-1248	BRL		μg/kg	209	1				**	300.3	X
11097-69-1	Aroclor-1254	4,860,000	E	µg/kg	209	1	*			W		X
11096-82-5	Aroclor-1260	3,880,000	E	µg/kg	209	1						X
37324-23-5	Aroclor-1262	BRL		µg/kg	209	1		980	1.00	**		>
11100-14-4	Aroclor-1268	BRL		µg/kg	209	1		н				>
Surrogate r	ecoveries:								7777			
0386-84-2	4,4-DB-Octafluorobiphenyl (Sr)	102			30-150 %					20	2.99	
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr) [2C]	84			30-150 %		*	(m		. 65	*	
051-24-3	Decachlorobiphenyl (Sr)	5360	S01		30-150 %		**		*			
2051-24-3	Decachlorobiphenyl (Sr) [2C]	873	S04		30-150 %			32		0.00	38	
	is of Polychlorinated Biphenyls by method SW846 3540C	y SW846 8082	GS1									
2674-11-2	Aroclor-1016	BRL		µg/kg	209000	1000	SW846 8082	17-Aug-10	19-Aug-10	IMR	1017548	X
1104-28-2	Aroclor-1221	BRL		μg/kg	209000	1000	¥		"		"	X
1141-16-5	Aroclor-1232	BRL		µg/kg	209000	1000			.,			×
3469-21-9	Aroclor-1242	BRL		μg/kg	209000	1000		*	54			×
2672-29-6	Aroclor-1248	BRL		µg/kg	209000	1000	W	*				×
1097-69-1	Aroclor-1254	24,700,000		μg/kg	209000	1000				**		×
1096-82-5	Aroclor-1260	5,350,000		µg/kg	209000	1000				и.	н	×
7324-23-5	Aroclor-1262	BRL		µg/kg	209000	1000		*	-			×
1100-14-4	Aroclor-1268	BRL		µg/kg	209000	1000						X
urrogate re	ecoveries:											- 13
0386-84-2	4,4-DB-Octafluorobiphenyl (Sr)	0	S01		30-150 %		200	H:	н	**		
0386-84-2	4,4-DB-Octafluorobiphenyl (Sr) [2C]	0	S01		30-150 %			•			*	
051-24-3	Decachlorobiphenyl (Sr)	0	S01		30-150 %		•		60	**		

32510081 SB16704			North Congression	t Project 32510	<u>#</u>	Matrix Caulking		lection Date 3-Aug-10 13			ceived Aug-10	
CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert
Semivolati	ile Organic Compounds by GC											
	nated Biphenyls by SW846 8082)										
	by method SW846 3540C											
12674-11-2	50% 55 050P-00	BRL		µg/kg	195	1	SW846 8082	17-Aug-10	19-Aug-10	IMR	1017548	X
11104-28-2	Aroclor-1221	BRL		µg/kg	195	1	*		30		H	X
11141-16-5	Aroclor-1232	BRL		µg/kg	195	1	-		"	"	*	X
53469-21-9	Aroclor-1242	BRL		µg/kg	195	1				(2)		X
12672-29-6	Aroclor-1248	BRL		µg/kg	195	1				(4)	**	X
11097-69-1	Aroclor-1254	4,180,000	E	μg/kg	195	1	**	W			*	X
11096-82-5	Aroclor-1260	3,190,000	E	µg/kg	195	1				350	н	X
37324-23-5	Aroclor-1262	BRL		μg/kg	195	1	*		**	н	w	X
11100-14-4	Aroclor-1268	BRL		µg/kg	195	1			*	**		X
Surrogate r	ecoveries:											
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr)	90			30-150 %		9.	*	**	w	**	
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr) [2C]	84			30-150 %		¥0		"	•	•	
2051-24-3	Decachlorobiphenyl (Sr)	3570	S04		30-150 %		"			25	**	
2051-24-3	Decachlorobiphenyl (Sr) [2C]	672	S04		30-150 %		9.5	*		36	*	
	is of Polychlorinated Biphenyls b	y SW846 8082	GS1									
Committee Transaction	by method SW846 3540C											
	Aroclor-1016	BRL		µg/kg	195000	1000	SW846 8082	17-Aug-10	19-Aug-10	IMR	1017548	X
11104-28-2	Aroclor-1221	BRL		µg/kg	195000	1000	н				- 5	X
11141-16-5	Aroclor-1232	BRL		µg/kg	195000	1000	311	3.00	05	ж		X
53469-21-9	Aroclor-1242	BRL		µg/kg	195000	1000	100	2.40				×
12672-29-6	Aroclor-1248	BRL		µg/kg	195000	1000				"	**	X
11097-69-1	Aroclor-1254	30,700,000		µg/kg	195000	1000	250			н		X
11096-82-5	Aroclor-1260	3,760,000		μg/kg	195000	1000	44		- 4	**		X
37324-23-5	Aroclor-1262	BRL		µg/kg	195000	1000	**				**	X
11100-14-4	Aroclor-1268	BRL		µg/kg	195000	1000		0901		**	н	X
Surrogate re	ecoveries:											
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr)	0	S01		30-150 %		0		н		**	
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr) [2C]	0	S01		30-150 %		y e			20	38.1	
2051-24-3	Decachlorobiphenyl (Sr)	0	S01		30-150 %				*	W.	194	
	Decachlorobiphenyl (Sr) [2C]	0	S01									

Sample Identification

Sample Id 32510081. SB16704-				t Project # 2510	V	<u>Matrix</u> Vindow Gla		ection Date 3-Aug-10 1		-	eceived Aug-10	
CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Semivolati	le Organic Compounds by GC											
	nated Biphenyls by SW846 8082 by method SW846 3540C											
12674-11-2	Aroclor-1016	BRL		µg/kg	184	1	SW846 8082	17-Aug-10	19-Aug-10	IMR	1017548	×
11104-28-2	Aroclor-1221	BRL		µg/kg	184	1	iii	**	*	49	W1	X
11141-16-5	Aroclor-1232	BRL		µg/kg	184	1	**					×
53469-21-9	Aroclor-1242	BRL		µg/kg	184	1	**	**	**		95	X
12672-29-6	Aroclor-1248	BRL		µg/kg	184	1	H	ř.	w.	367	WE	X
11097-69-1	Aroclor-1254	24,000		μg/kg	184	1			*			X
11096-82-5	Aroclor-1260	BRL		µg/kg	184	1		*	**			×
37324-23-5	Aroclor-1262	BRL		µg/kg	184	1	37443	H)	**	н		X
11100-14-4	Aroclor-1268	BRL		µg/kg	184	1	*	•	*	*	*	X
Surrogate re	ecoveries:											
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr)	86			30-150 %			*	*			
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr) [2C]	66			30-150 %			24	•		н	
2051-24-3	Decachlorobiphenyl (Sr)	106			30-150 %		7.00		**	н		
2051-24-3	Decachlorobiphenyl (Sr) [2C]	94			30-150 %				*	н	**	

CAS No.	Analyte(s)
SB16704	-17
32510081	1317
Sample I	dentification

Client Project # 32510

Matrix Window Glazing Collection Date/Time 13-Aug-10 14:15 Received 16-Aug-10

SB16704	4-17		•	22310	···	indow On	azing 1.	3-Aug-10 14	F.13	10-	Aug-10	
CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert
Semivolat	tile Organic Compounds by GC											
	rinated Biphenyls by SW846 8082											
	by method SW846 3540C											
12674-11-2	Aroclor-1016	BRL		µg/kg	188	1	SW846 8082	17-Aug-10	19-Aug-10	IMR	1017548	X
11104-28-2	Aroclor-1221	BRL		µg/kg	188	1	•			**	*	X
11141-16-5	Aroclor-1232	BRL		µg/kg	188	1			200	*		X
53469-21-9	Aroclor-1242	BRL		μg/kg	188	1			*	*		X
12672-29-6	Aroclor-1248	BRL		μg/kg	188	1		(8)				X
11097-69-1	Aroclor-1254	112,000	E	μg/kg	188	1					**	X
11096-82-5	Aroclor-1260	19,700		μg/kg	188	1			94		**	X
37324-23-5	Aroclor-1262	BRL		μg/kg	188	1						Х
11100-14-4	Aroclor-1268	BRL		µg/kg	188	1				*		×
Surrogate	recoveries:											7.250-2-
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr)	52			30-150 %		*	*	*		н	
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr) [2C]	76			30-150 %		м	8 M .0		40		
2051-24-3	Decachlorobiphenyl (Sr)	139			30-150 %				**	•	**	
2051-24-3	Decachlorobiphenyl (Sr) [2C]	124			30-150 %					70	125	
	sis of Polychlorinated Biphenyls by by method SW846 3540C	SW846 8082	GS1									
12674-11-2	Aroclor-1016	BRL		µg/kg	1880	10	SW846 8082	17-Aug-10	19-Aug-10	IMR	1017548	X
11104-28-2	Aroclor-1221	BRL		µg/kg	1880	10	*		"	100	"	X
11141-16-5	Aroclor-1232	BRL		μg/kg	1880	10						X
53469-21-9	Aroclor-1242	BRL		µg/kg	1880	10		100	: 9		26	×
12672-29-6	Aroclor-1248	BRL		μg/kg	1880	10	36	н	79			×
1097-69-1	Aroclor-1254	115,000		μg/kg	1880	10				**		×
1096-82-5	Aroclor-1260	24,300		μg/kg	1880	10	,,			**	**	X
7324-23-5	Aroclor-1262	BRL		µg/kg	1880	10		**	**			X
1100-14-4	Aroclor-1268	BRL		µg/kg	1880	10	W			**		×
Surrogate r	recoveries:											2000/2
	4,4-DB-Octafluorobiphenyl (Sr)	90			30-150 %		*	*	**		*	
0386-84-2	i, i bb ocidinadiosiphichiji (di)											
0386-84-2 0386-84-2	4,4-DB-Octafluorobiphenyl (Sr)	80			30-150 %		"	*	-		*	
	,, , , , , , , , , , , , , , ,	80 105			30-150 % 30-150 %							

Sample Ide 325100813	18		1	Project # 2510		Matrix Caulking		ction Date/ Aug-10 14		100000	ceived Aug-10	
SB16704-1 CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Cominglatile	e Organic Compounds by GC											
	ated Biphenyls by SW846 8082											
repared b	by method SW846 3540C						0141046 0000	17 Aug 10	19-Aug-10	IMR	1017548	X
	Aroclor-1016	BRL		µg/kg	193	1	SW846 8082	17-Aug-10	"			×
11104-28-2	Aroclor-1221	BRL		µg/kg	193	1					**	×
11141-16-5	Aroclor-1232	BRL		µg/kg	193	1		1050		**		X
53469-21-9	Aroclor-1242	BRL		µg/kg	193	1	*					X
12672-29-6	Aroclor-1248	BRL		µg/kg	193	1						X
11097-69-1	Aroclor-1254	5,150,000	E	µg/kg	193	1	87	•				
	Aroclor-1260	3,050,000	E	µg/kg	193	1	W		**			X
11096-82-5	DESCRIPTION OF THE PROPERTY OF	BRL		µg/kg	193	1						Х
37324-23-5	Aroclor-1262	BRL		μg/kg	193	1		*				X
11100-14-4	Aroclor-1268	DIVE		75 5								
Surrogate re	ecoveries:				00 450 0/							
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr)	76			30-150 %							
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr) [2C]	65			30-150 %		NGSA.					
2051-24-3	Decachlorobiphenyl (Sr)	1250	S04		30-150 %		(S H .S	0.70				
2051-24-3	Decachlorobiphenyl (Sr) [2C]	1020	S04		30-150 %		•		2002			
	is of Polychlorinated Biphenyls b	v SW846 8082	GS1									
Prepared	by method SW846 3540C								0.40.40.4	0 IMR	101754	8 X
12674-11-2	Arodor-1016	BRL		µg/kg	964000	5000	SW846 8082	17-Aug-1	0 19-Aug-1			Х
11104-28-2	Aroclor-1221	BRL		µg/kg	964000	5000	*					X
11141-16-5	Aroclor-1232	BRL		µg/kg	964000	5000	*			-	40	X
53469-21-9	Aroclor-1242	BRL		µg/kg	964000	5000	**					
12672-29-6	Aroclor-1248	BRL		µg/kg	964000	5000		ā			-	X
		78,300,000		µg/kg	964000	5000	38					X
11097-69-1	Aroclor-1254	6,870,000		μg/kg	964000	5000	•		*	320		×
11096-82-5		BRL		μg/kg	964000	5000	177		*	**		×
37324-23-5	Aroclor-1262			µg/kg	964000	5000		32	•		-	×
11100-14-4	Aroclor-1268	BRL		Parra					av- ====			
Surrogate	recoveries:											
10386-84-2		0	S01		30-150 %				*		*	
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr)	0	S01		30-150 %			P0000000000000000000000000000000000000	0.000	-		
2051-24-3	[2C] Decachlorobiphenyl (Sr)	0	S01		30-150 %	,	•		10.00	20	- 100 - 100	
						á				***	50/63	

Sample Ide 325100813 SB16704-1	19			Project # 2510		Matrix Caulking		ction Date/ Aug-10 14		000000000000000000000000000000000000000	ceived Aug-10	
Participation of	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Semiyolatile	e Organic Compounds by GC											
	ated Biphenyls by SW846 8082											
Prepared b	by method SW846 3540C					92	0141040 0000	17 Aug 10	19-Aug-10	IMR	1017548	×
12674-11-2	Aroclor-1016	BRL		μg/kg	179	1	SW846 8082	17-Aug-10	"			×
11104-28-2	Aroclor-1221	BRL		µg/kg	179	1		100	-	w	н	×
11141-16-5	Aroclor-1232	BRL		µg/kg	179	1	**					×
53469-21-9	Aroclor-1242	BRL		µg/kg	179	1	**					×
12672-29-6	Aroclor-1248	BRL		µg/kg	179	1	•					
11097-69-1	Aroclor-1254	1,330,000	E	μg/kg	179	1			*			X
11096-82-5	Aroclor-1260	284,000	E	μg/kg	179	1	ж		•			×
	Aroclor-1262	BRL		µg/kg	179	1	"	*		3**		X
	Aroclor-1268	BRL		μg/kg	179	1					. 11.5	X
Surrogate re	ecoveries:								_			
	4,4-DB-Octafluorobiphenyl (Sr)	115			30-150 %		**				,,,,	
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr) [2C]	76			30-150 %		•			0.000 0.000		
2051-24-3	Decachlorobiphenyl (Sr)	241	S04		30-150 %				•	-		
2051-24-3	Decachlorobiphenyl (Sr) [2C]	129			30-150 %				0,000	**	-	
Re-analysi	is of Polychlorinated Biphenyls by	SW846 8082	GS1									
Prepared I	by method SW846 3540C						SW846 8082	17 Aug-1(19-Aug-10) IMR	101754	8 X
12674-11-2	Aroclor-1016	BRL		µg/kg	35900	200	500046 6002	#	, is rug i			×
11104-28-2	Aroclor-1221	BRL		µg/kg	35900	200	-	2000				X
11141-16-5	Aroclor-1232	BRL		µg/kg	35900	200	-	794				X
53469-21-9	Aroclor-1242	BRL		µg/kg	35900	200		2020				X
12672-29-6	Aroclor-1248	BRL		µg/kg	35900	200	1981	101				
11097-69-1	Aroclor-1254	2,280,000		µg/kg	35900	200	н					X
11096-82-5	Aroclor-1260	395,000		μg/kg	35900	200	*		(300)		7	X
37324-23-5	Aroclor-1262	BRL		µg/kg	35900	200				н.		X
	Aroclor-1268	BRL		µg/kg	35900	200	н			"	н	Х
Surrogate r	recoveries:								a:			
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr)	0	S01		30-150 %		*		<u></u>		200	
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr) [2C]	0	S01		30-150 %		*					
2051-24-3	Decachlorobiphenyl (Sr)	0	S01		30-150 %		*	40	40	*		
2051-24-3	Decachiorobiphenyl (Sr) [2C]	0	S01		30-150 %				*	*		

mple Ider 51008132	ntification			Project # 510	(<u>Matrix</u> Caulking	Collec 13-/	tion Date/Tin Aug-10 14:40	<u>ne</u>		<u>eeived</u> Aug-10		_
316704-2					*RDL L	Dilution	Method Ref.	Prepared An	nalyzed /	4nalyst	Batch	Cert	_
4S No.	Analyte(s)	Result	Flag	Units	KDL L								
mivolatile	e Organic Compounds by GC												
alveblorin	ated Biphenyls by SW846 8082							17-Aug-10 19	a-Διια-10	IMR	101754	48 X	
repared b	by method SW846 3540C	221		µg/kg	258	1		17-Aug-10 13	"			X	
2674-11-2	Aroclor-1016	BRL		µg/kg	258	1	-					X	
1104-28-2	Aroclor-1221	BRL		μg/kg	258	1	3.00		*			X	05
1141-16-5	Aroclor-1232	BRL		µg/kg	258	1	*				*	×	:
3469-21-9	Aroclor-1242	BRL		μg/kg	258	1						×	:
2672-29-6	Aroclor-1248	BRL		µg/kg	258	1)	(
1097-69-1	Aroclor-1254	18,900		μg/kg	258	1	M.)		200		**		X
11096-82-5	Aroclor-1260	BRL		µg/kg	258	1	**	**					×
37324-23-5	WOODS AND ASSESSED AS	BRL			258	1	•	*					_
11100-14-4		BRL		µg/kg									
or contraction of	5 3800 S000							•					
	recoveries: 4,4-DB-Octafluorobiphenyl (Sr)	91			30-150 %							1	
10386-84-2		89			30-150 %								
10386-84-2	2 4,4-DB-Octafluorobiphenyl (Sr) [2C]				30-150 %		**		•		8		
	1: bead (Cd)	109			30-150 %		и	•	**				
2051-24-3													
2051-24-3 2051-24-3	1. 1: hand (Sr) [2C]	81					Co	allection Date	:/Time		Receiv		
2051-24-3 Sample 3251008	Decachlorobiphenyl (Sr) [2C] Identification 81321	81	Clie	ent Project #		<u>Matri</u> Window (1/4	ollection Date 13-Aug-10 1	4:55		16-Aug	g -1 0	-
2051-24-3 Sample	Decachlorobiphenyl (Sr) [2C] Identification 81321	a 54		32510		Window C	Glazing	13-Aug-10 1	e/Time 4:55 1 Analyz		16-Aug	g -1 0	Cer
Sample 3251008 SB1670 CAS No.	Decachlorobiphenyl (Sr) [2C] Identification 81321 04-21 Analyte(s)	81 Result	<u>Clie</u> Flag	32510		Window C	Glazing	13-Aug-10 1	4:55		16-Aug	g -1 0	Cert
Sample 3251008 SB1670	Decachlorobiphenyl (Sr) [2C] Identification 81321 04-21 Analyte(s) Intile Organic Compounds by GC	Result	Flag	32510 Units		Window C	Glazing	13-Aug-10 1	4:55		16-Aug	g -1 0	Cer
2051-24-3 Sample 3251008 SB1670 CAS No.	Decachlorobiphenyl (Sr) [2C] Identification 81321 04-21 Analyte(s) latile Organic Compounds by GC	Result		32510 Units		Window (Glazing n Method Rej	13-Aug-10 1	4:55 1 Analyz	ed And	16-Aug	g -1 0	
Sample 3251008 SB1670 CAS No. Semivol Polychl Prepare	Decachlorobiphenyl (Sr) [2C] Identification 81321 04-21 Analyte(s) latile Organic Compounds by GC lorinated Biphenyls by SW846 80 ed by method SW846 3540C	Result	Flag	32510 Units		Window C	Glazing	13-Aug-10 1	4:55	ed And	16-Aug	g-10	×
2051-24-3 Sample 3251008 SB1670 CAS No. Semivol Polychl Prepare 12674-11	Identification 81321 04-21 Analyte(s) latile Organic Compounds by GC lorinated Biphenyls by SW846 80 ed by method SW846 3540C 1-2 Aroclor-1016	Result 82 BRL	Flag	32510 Units	*RDL	Window (Glazing n Method Rej SW846 808	13-Aug-10 1 f. Prepared	4:55 1 Analyz	ed And	16-Aug	g-10 eatch	×
2051-24-3 Sample 3251008 SB1670 CAS No. Semivol Prepare 12674-11 11104-28	Identification 81321 04-21 Analyte(s) latile Organic Compounds by GC lorinated Biphenyls by SW846 80 ed by method SW846 3540C 1-2 Aroclor-1016 8-2 Aroclor-1221	Result 82 BRL BRL	Flag	32510 **Units** **pg/kg** *pg/kg** *pg/kg**	*RDL	Window C Dilutio	Glazing n Method Rej	13-Aug-10 1 f. Prepared	4:55 1 Analyz	ed And	16-Aug	eatch	×
2051-24-3 Sample 3251008 SB1670 CAS No. Semivol Prepare 12674-11 11104-28	Identification 81321 04-21 Analyte(s) latile Organic Compounds by GC lorinated Biphenyls by SW846 80 ed by method SW846 3540C 1-2 Aroclor-1016	Result 82 BRL BRL BRL	Flag	32510 <i>Units</i> µg/kg µg/kg µg/kg	*RDL 868 868 868	Dilutio	Glazing n Method Rej SW846 808	13-Aug-10 1 f. Prepared	4:55 I Analyz 10 19-Aug	ed And	16-Aug nlyst B	s-10	× × >
2051-24-3 Sample 3251008 SB1670 CAS No. Semivol Polychl Prepars 12674-11 11104-28 11141-16	Identification 81321 04-21 Analyte(s) latile Organic Compounds by GC lorinated Biphenyls by SW846 80 ed by method SW846 3540C 1-2 Aroclor-1016 8-2 Aroclor-1221	Result 82 BRL BRL BRL BRL	Flag	Jacobs Ja	*RDL 868 868 868 868	Dilutio	Glazing n Method Rej SW846 808	13-Aug-10 1 f. Prepared	4:55 I Analyz 10 19-Aug	ed And	16-Aug nlyst B	5-10 Catch	× × × × × × × × × × × × × × × × × × ×
2051-24-3 Sample 3251008 SB1670 CAS No. Semivol Polychl Prepars 12674-11 11104-28 11141-16	Identification 81321 04-21 Analyte(s) latile Organic Compounds by GC lorinated Biphenyls by SW846 80 ed by method SW846 3540C 1-2 Aroclor-1016 8-2 Aroclor-1221 6-5 Aroclor-1232 1-9 Aroclor-1242	Result BRL BRL BRL BRL BRL	Flag	Jacobs Ja	*RDL 868 868 868 868	Dilutio	Glazing n Method Rej SW846 808	13-Aug-10 1 f. Prepared	4:55 I Analyz 10 19-Aug	ed And	16-Aug nlyst B	5-10 Catch	× × × × × × × × × × × × × × × × × × ×
2051-24-3 Sample 3251008 SB1670 CAS No. Semivol Polychl Prepare 12674-11 11104-28 11141-16 53469-2	Identification 81321 04-21 Analyte(s) Identification 81321 Analyte(s) Identification 81321 Analyte(s) Identification 81321 Analyte(s) Identification 84-21 Identification 85-24 Identification 86-25 Identification 87-24 Identification 88-24 Identification 88-25 Identification 88-26 Identification 88-27 Identification 88-27 Identification 88-28 Identification Identification 88-28 Identification Identific	Result BRL BRL BRL BRL BRL 13,300	Flag	Jacobs Ja	*RDL 868 868 868 868 868	Dilutio	Glazing Method Rej	13-Aug-10 1 f. Prepared	4:55 I Analyz 10 19-Aug	ed And	16-Aug nlyst B	s-10	× > >
2051-24-3 Sample 3251008 SB1670 CAS No. Semivol Polychl Prepare 12674-11 11104-28 11141-16 53469-2 12672-2 11097-6	Identification 81321 04-21 Analyte(s) Identification 81321 04-21 Analyte(s) Identification 81321 04-21 Analyte(s) Identification 81321 Odd Provided Structure Identification 802 Identification 803 Identification 804-21 Identification 804-21 Identification 805 Identification 806 Identification 807 Identification 807 Identification 808 Identification 808 Identification 808 Identification 809 Identification 809	Result BRL BRL BRL BRL BRL BRL BRL BR	Flag	Jacobs Ja	*RDL 868 868 868 868 868 868	Dilutio	Glazing Method Rej	13-Aug-10 1 f. Prepared	4:55 I Analyz 10 19-Aug	ed And	16-Aug nlyst B	5-10	× × × × × × × × × × × × × × × × × × ×
2051-24-3 Sample 3251008 SB1670 CAS No. Semivol Polychl Prepare 12674-11 11104-28 11141-16 53469-2 11097-6 11095-8	Identification 81321 94-21 Analyte(s) latile Organic Compounds by GC lorinated Biphenyls by SW846 80 ed by method SW846 3540C 1-2 Aroclor-1016 8-2 Aroclor-1221 6-5 Aroclor-1232 1-9 Aroclor-1242 9-6 Aroclor-1248 39-1 Aroclor-1254 32-5 Aroclor-1260	Result BRL BRL BRL BRL BRL 13,300	Flag	32510 <i>Units</i> µg/kg µg/kg µg/kg µg/kg µg/kg µg/kg µg/kg µg/kg	*RDL 868 868 868 868 868 868 868	Dilutio	Glazing m Method Rej	13-Aug-10 1 f. Prepared	4:55 I Analyz 10 19-Aug	ed And	16-Aug	atch	× × × × × × × × × × × × × × × × × × ×
2051-24-3 Sample 3251008 SB1670 CAS No. Semivol Polychl Prepare 12674-11 11104-28 11141-16 53469-2 11097-6 11096-8 37324-2	Identification 81321 94-21 Analyte(s) latile Organic Compounds by GC lorinated Biphenyls by SW846 80 ed by method SW846 3540C 1-2 Aroclor-1016 8-2 Aroclor-1221 6-5 Aroclor-1232 1-9 Aroclor-1242 9-6 Aroclor-1248 39-1 Aroclor-1254 32-5 Aroclor-1260	Result BRL BRL BRL BRL BRL BRL BRL BR	Flag	Jacobs Ja	*RDL 868 868 868 868 868 868 868	Dilutio	Glazing m Method Rej	13-Aug-10 1 f. Prepared	4:55 I Analyz 10 19-Aug	ed And	16-Aug	atch	× × × × × × × × × × × × × × × × × × ×
2051-24-3 Sample 3251008 SB1670 CAS No. Semivol Polychl Prepare 12674-11 11104-28 11141-10 53469-2 11095-8 37324-2 11100-	Identification 81321 04-21 Analyte(s) Identification 81321 04-21 Analyte(s) Identification 81321 04-21 Analyte(s) Identification 81321 04-21 Analyte(s) Identification 82 Identification 83 Identification 84 Identification 84 Identification 85 Identification 85 Identification 86 Identification 86 Identification 87 Identification 87 Identification 88	Result BRL BRL BRL BRL 13,300 BRL BRL BRL	Flag	32510 <i>Units</i> µg/kg µg/kg µg/kg µg/kg µg/kg µg/kg µg/kg µg/kg	*RDL 868 868 868 868 868 868 868	Dilutio 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Glazing m Method Rej	13-Aug-10 1 f. Prepared	4:55 I Analyz 10 19-Aug	ed And	16-Aug	;-10	
2051-24-3 Sample 3251008 SB1670 CAS No. Semivol Polychl Prepare 12674-11 11104-28 11141-16 53469-2 11097-6 11096-8 37324-2 11100- Surros	Identification 81321 94-21 Analyte(s) Interest Experiment Analyte(s) Interest Experiment Interest Exper	Result BRL BRL BRL BRL 13,300 BRL BRL BRL	Flag	32510 <i>Units</i> µg/kg µg/kg µg/kg µg/kg µg/kg µg/kg µg/kg µg/kg	*RDL 868 868 868 868 868 868 868 30-150	Dilutio 5 5 5 5 5 5 5 5 5 7 7 8 7 8 7 8 7 8 7	Glazing m Method Rej	13-Aug-10 1 f. Prepared	4:55 I Analyz 10 19-Aug	ed And	16-Aug	;-10	× × × × × × × × × × × × × × × × × × ×
2051-24-3 Sample 3251008 SB1670 CAS No. Semivol Polychl Prepare 12674-11 11104-28 11141-16 53469-2 11097-6 11096-8 37324-2 11100- Surros	Identification 81321 94-21 Analyte(s) Intile Organic Compounds by GC Iorinated Biphenyls by SW846 80 ed by method SW846 3540C 1-2 Aroclor-1016 8-2 Aroclor-1221 6-5 Aroclor-1232 1-9 Aroclor-1242 19-6 Aroclor-1248 89-1 Aroclor-1254 89-2 Aroclor-1260 23-5 Aroclor-1260 23-5 Aroclor-1262 14-4 Aroclor-1268 19-8-2 4,4-DB-Octafluorobiphenyl (Sizel-19-8-2-2-4,4-DB-Octafluorobiphenyl (Sizel-19-8-2-4,4-DB-Octafluorobiphenyl (Sizel-19-8-	Result BRL BRL BRL BRL 13,300 BRL BRL BRL	Flag	32510 <i>Units</i> µg/kg µg/kg µg/kg µg/kg µg/kg µg/kg µg/kg µg/kg	*RDL 868 868 868 868 868 868 30-150 30-150	Dilutio 5 5 5 5 5 5 7 7 8 7 8 7 8 7 8 7 8 7 8	Glazing m Method Rej	13-Aug-10 1 f. Prepared	4:55 I Analyz 10 19-Aug	ed And	16-Aug	;-10	× × × × × × × × × × × × × × × × × × ×
2051-24-3 Sample 3251008 SB1670 CAS No. Semivol Prepare 12674-11 11104-28 11141-16 53469-2 11097-6 11096-8 37324-2 11100- Surros 10386-	Identification 81321 04-21 Analyte(s) Intile Organic Compounds by GC Identification Statile Organic Compounds by GC Identification Intile Organic Compounds by GC Identification Intile Organic Compounds by GC Identification Intile Organic Compounds by GC Identification Ide	Result BRL BRL BRL BRL 13,300 BRL BRL BRL	Flag	32510 <i>Units</i> µg/kg µg/kg µg/kg µg/kg µg/kg µg/kg µg/kg µg/kg	*RDL 868 868 868 868 868 868 868 30-150	Dilutio Dilutio	Glazing m Method Rej	13-Aug-10 1 f. Prepared	4:55 I Analyz 10 19-Aug	g-10 II	16-Aug	;-10	× × × × × × × × × × × × × × × × × × ×

	mple Identification 510081322		Client Project # 32510		W	<u>Matrix</u> indow Gla		ction Date/ Aug-10 15:	10	16-A	eived aug-10	
B16704-2				** **-	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
CAS No.	Analyte(s)	Result	Flag	Units	RDE							
Polychlorin Prepared b 12674-11-2 11104-28-2 111141-16-5 53469-21-9 12672-29-6 11097-69-1 11096-82-5 37324-23-5	Aroclor-1262	BRL BRL BRL BRL BRL 7,440 BRL BRL BRL	R01	halya halya halya halya halya halya halya halya halya	996 996 996 996 996 996 996	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	SW846 8082	17-Aug-10	19-Aug-10 "	IMR	1017548	× × × × × × × ×
11100-14-4 Surrogate 10386-84-2 10386-84-2 2051-24-3 2051-24-3	recoveries: 4.4-DB-Octafluorobiphenyl (Sr) 4.4-DB-Octafluorobiphenyl (Sr) [2C] Decachlorobiphenyl (Sr)	40 45 108 65			30-150 30-150 30-150 30-150	%						

25100813			S. T.	Project #		<u>Matrix</u> Caulking	13-4	tion Date/I Aug-10 15:	15	16-A	eived Aug-10	
SB16704-2		Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
CAS No.	Analyte(s)	Result	•									
Semivolatil	le Organic Compounds by GC											
Polychloria	nated Biphenyls by SW846 8082											v
Prepared	by method SW846 3540C			μg/kg	192	1	SW846 8082	17-Aug-10	19-Aug-10	IMR	1017548	
12674-11-2	Aroclor-1016	BRL			192	1	¥	**	•	*		×
11104-28-2	Aroclor-1221	BRL		µg/kg	192	1		*		•		X
11141-16-5	Aroclor-1232	BRL		µg/kg		1		•	*		*	X
53469-21-9	Aroclor-1242	BRL		µg/kg	192	i			•		**	×
12672-29-6	Aroclor-1248	BRL		µg/kg	192				**	•	W	X
11097-69-1	Aroclor-1254	71,600	E	µg/kg	192	1	0.00			(0.90)		X
		BRL		µg/kg	192	1	1021			46	9.00	X
11096-82-5		BRL		µg/kg	192	1	-					X
37324-23-5		BRL		µg/kg	192	1			- Tree-h 14 0cc			
11100-14-4	Aroclor-1268	DILL										
Surrogate	recoveries:				30-150 %				*	×		
10386-84-2	11.1-1/04	97			30-150 %			w				
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr)	80			30-150 %							
	[2C]				30-150 %		(#)		"		20	
2051-24-3		83			30-150 %		w	177				
2051-24-3		57			30 100 70							
Re-analy	ysis of Polychlorinated Biphenyls b	y SW846 808	<u>2</u> GS1							0K 10000244		40 V
Prepare	d by method SW846 3540C			μg/kg	1920	10	SW846 8082	17-Aug-1	0 19-Aug-1	0 IMR	10175	
12674-11-	2 Aroclor-1016	BRL		1995	1920	10						X
11104-28-	2 Aroclor-1221	BRL		μg/kg	1920	10	*	•	**		*	X
11141-16-	5 Aroclor-1232	BRL		μg/kg -	1920	10	¥			(m	3. 4 .5	X
53469-21-	9 Aroclor-1242	BRL		ha/ka		10		*		-		×
12672-29-	-6 Aroclor-1248	BRL		µg/kg	1920	i salaman			34	3.00	"	×
11097-69	1229	87,400		µg/kg	1920	10						>
		BRL		µg/kg	1920						*	>
11096-82		BRL		µg/kg	1920	10	**			и		>
37324-23		BRL		µg/kg	1920	10						
11100-14	-4 Aroclor-1268	2000			Q-05-03							
Surroga	te recoveries:				30-150	%				**		
10386-84	a the board (Cel	120			30-150						-	
10386-84		105			30-130	70			29.4			
3.5.5.6.03.03.0	[2C]				30-150	%	**	**				
2051-24	 Decachlorobiphenyl (Sr) 	95			30-150			*				
2051-24	-3 Decachlorobiphenyl (Sr) [2C]	85			30-130							

ample Ide 25100813	ntification			Project# 2510	W	<u>Matrix</u> indow Gla		ction Date/ Aug-10 15:	25	16-A	eived aug-10	
B16704-2						Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dituitor	Memory					
Semivolatil	e Organic Compounds by GC nated Biphenyls by SW846 8082		R01							IMR	1017548	X
Prepared I	by method SW846 3540C			μg/kg	15300	100	SW846 8082	17-Aug-10	19-Aug-10	IIVIIN	"	Х
12674-11-2	Aroclor-1016	BRL		µg/kg	15300	100						X
1104-28-2	Aroclor-1221	BRL		µg/kg	15300	100						X
1141-16-5	Aroclor-1232	BRL		ha/ya	15300	100	*				2.40	X
53469-21-9	Aroclor-1242	BRL		*************	15300	100		**				X
12672-29-6	Aroclor-1248	BRL		µg/kg	15300	100	*	•				X
11097-69-1	Aroclor-1254	BRL		μg/kg	15300	100	*					×
11096-82-5		BRL		μg/kg	15300	100		34				5
37324-23-5		BRL		µg/kg	15300	100	(M.)					
11100-14-4	2 1015-1048-1 2000-	BRL		μg/kg	13555							
						an an	*		•	ж.	*	
	recoveries: 2 4,4-DB-Octafluorobiphenyl (Sr)	150			30-150 9			*	•	*	3.53	
10386-84-2		50			30-150 9	6						
10386-84-	2 4,4-DB-Octafluorobiphenyl (Sr) [2C]				30-150	%		•	*		¥	
2051-24-3		600	S02		30-150				*			
2051-24-3		100			30-150	70						

Semivo		to Andrews	******	*RDL	Spike Level	Source Result	%REC	%REG	n.	PD	RPD Limit
analyte(s)	Result I	Flag	Units	KDL	LC (C.		3,000		=		
Batch 1017532 - SW846 3540C					E	repared: 1	7-Aug-10 Ar	nalyzed:	18-Aug-1	0	
Blank (1017532-BLK1)			μg/kg wet	20.0	1,000						
Aroclor-1016	BRL		μg/kg wet	20.0							
Aroclor-1016 [2C]	BRL		μg/kg wet	20.0							
Aroclor-1221	BRL		μg/kg wet	20.0							
Aroclor-1221 [2C]	BRL		μg/kg wet	20.0							
Aroclor-1232	BRL		μg/kg wet	20.0							
Aroclor-1232 [2C]	BRL		μg/kg wet	20.0							
Aroclor-1242	BRL		μg/kg wet	20.0							
Aroclor-1242 [2C]	BRL		µg/kg wet	20.0							
Aroclor-1248	BRL		µg/kg wet	20.0							
Aroclor-1248 [2C]	BRL		µg/kg wet	20.0							
Aroclor-1254	BRL		μg/kg wet	20.0							
Aroclor-1254 [2C]	BRL		µg/kg wet	20.0							
Aroclor-1260	BRL		μg/kg wet	20.0							
Aroclor-1260 [2C]	BRL		μg/kg wet	20.0							
Aroclor-1262	BRL		μg/kg wet	20.0							
Aroclor-1262 [2C]	BRL		μg/kg wet	20.0							
Aroclor-1268	BRL		μg/kg wet	20.0					THE RESERVE		
Aroclor-1268 [2C]	BRL	CHARLES			20	0.0	70	30	-150		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	14.1		μg/kg wet			0.0	82	30	0-150		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	16.4		μg/kg wet			0.0	103	30	0-150		
Surrogate: 4,4-DB-Octaholosephanyl (Sr)	20.6		μg/kg wet			0.0	107		0-150		
Surrogate: Decachiorobiphenyl (Sr) [2C]	21.4		μg/kg wet	B	21).U	d: 17-Aug-10		ed: 18-Au	ig-10	
							94	51	0-140		
LCS (1017532-BS1)	235		µg/kg we		77 572	50	90	-	0-140		
Aroclor-1016	224		μg/kg we	t 20.0		50	77		0-140		
Aroclor-1016 [2C]	192		µg/kg we	t 20.0		150	91		0-140		
Aroclor-1260	227		μg/kg we	t 20.0) 2	250		-	Section 2		
Aroclor-1260 [2C]	14.7		μg/kg we	et	2	20.0	74	511 1000 	30-150		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)			µg/kg we			20.0	86	10 00	30-150		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	17.3		μg/kg we			20.0	10	•	30-150		
Surrogate: Decachlorobiphenyl (Sr)	21.0		µg/kg we			20.0	11	(D)	30-150		
Surrogate: Decachlorobiphenyl (Sr) [2C]	22.0		F5 5			Prepare	ed: 17-Aug-1) Analy	zed: 18-A	ug-10	20
LCS Dup (1017532-BSD1)			μg/kg w	et 20.	0	250	9		50-140	0.3	30 30
Aroclor-1016	235		μg/kg w			250	8	•	50-140	3	
Aroclor-1016 [2C]	218		μg/kg w			250	7		50-140	4	30 30
Aroclor-1260	185		рд/кд w	71 (1)		250	8	8	50-140	4	30
Aroclor-1260 [2C]	219					20.0	7	2	30-150		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	14.3		μg/kg w			20.0	8	34	30-150		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [20	16.9		µg∕kg w			20.0	1	01	30-150		
Surrogate: 4,4-DB-Octobactoryl Surrogate: Decachlorobiphenyl (Sr)	20.1		µg/kg v			20.0		09	30-150		
Surrogate: Decachiorobiphenyl (Sr) [2C]	21.8		µg/kg v		4.00	Drana	red: 17-Aug-	10 Anal	lyzed: 18-	Aug-10	
				: SB16704		Fieba	BRL	200			40
<u>Duplicate (1017532-DUP1)</u>	BRL		μg/kg (2.1		BRL				40
Aroclor-1016	BRL		μg/kg		2.1		BRL				40
Aroclor-1016 [2C]	BRL		µg/kg	577 M	2.1		BRL				40
Aroclor-1221	BRL		µg/kg		2.1		BRL				40
Aroclor-1221 [2C]	BRL		μg/kg		2.1		BRL				40
Aroclor-1232	BRL		µg/kg		2.1		BRL				41
Aroclor-1232 [2C]	BRL		μg/kg		2.1		BRL				4
Aroclor-1242	BRL		μg/kg		22.1		BRL				4
Aroclor-1242 [2C]	BRL		µg/kg	dry 2	22.1		5110				

					Spike	Source		%REC		RPD
	2 %	Flog	Units	*RDL	Level	Result	%REC	Limits	RPD	Limit
nalyte(s)	Result	Flag	Omis							
Batch 1017532 - SW846 3540C			- 004	6704-09	Pr	epared: 17-	Aug-10 Ana	alyzed: 18-Au	<u>19-10</u>	
Duplicate (1017532-DUP1)			Source: SB1	22.1		BRL				40
Aroclor-1248 [2C]	BRL		μg/kg dry	22.1		3010			1	40
Aroclor-1254	3050		µg/kg dry	22.1		2510			14	40
Aroclor-1254 [2C]	2870		µg/kg dry	22.1		760				40
Aroclor-1260	BRL		µg/kg dry	22.1		723				40
Aroclor-1260 [2C]	BRL		μg/kg dry	22.1		BRL				40
Aroclor-1262	BRL		μg/kg dry	22.1		BRL				40
Aroclor-1262 [2C]	BRL		µg/kg dry	22.1		BRL				40
Aroclor-1268	BRL		µg/kg dry			BRL				40
Aroclor-1268 [2C]	BRL		µg/kg dry	22.1			55	30-150		
	12.1		µg/kg dry		22.1		76	30-150		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	16.8		µg/kg dry		22.1		72	30-150		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	16.0		µg/kg dry		22.1		98	30-150		
Surrogate: Decachlorobiphenyl (Sr)	21.6		µg/kg dry		22.1	19 A		nalyzed: 18-	Aug-10	
Surrogate: Decachlorobiphenyl (Sr) [2C]			Source: S	B16704-09				40-135		
Matrix Spike (1017532-MS1)	210		µg/kg dry		297	200000	71	40-135		
Aroclor-1016	224		µg/kg dry		297			40-135		
Aroclor-1016 [2C]	706	QM2	μg/kg dry	23.7	297	222	-18	40-135		
Aroclor-1260	797	QM2	µg/kg dr)	23.7	297	723	25			
Aroclor-1260 [2C]			µg/kg dn		23.	7	61	30-150		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	14.6		μg/kg dr		23.	7	79	30-150		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	18.7		µg/kg dr		23.	7	83	30-150		
Surrogate: Decachlorobiphenyl (Sr)	19.7		pg/kg dr		23	7	91	30-150		
Surrogate: Decachlorobiphenyl (Sr) [2C]	21.7			SB16704-09		Prepared:	17-Aug-10	Analyzed: 1	9-Aug-10	
Matrix Spike Dup (1017532-MSD1)					29		1000	40-135	3	30
Aroclor-1016	203		μg/kg di		29		L 74	40-135	2	30
Aroclor-1016 [2C]	220		µg/kg d		29			40-13	5 NR	30
Aroclor-1010 [20]	690	QM				72		40-13	5 13	30
Aroclor-1260 [2C]	788	QN	2 µg/kg d	гу 23.7	00000		60	30-15	0	
	14.2		μg/kg d	ry		3.7	83			
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	19.6		μg/kg o	iry		3.7	96		0	
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	22.8		μg/kg c	iry		3.7	10-			
Surrogate: Decachlorobiphenyl (Sr)	24.6		µg/kg (iry	2	3.7	70			
Surrogate: Decachlorobiphenyl (Sr) [2C]									18-Aug-10	
Batch 1017533 - SW846 3540C						Prepare	d: 17-Aug-10	Analyzed:	10-Add 10	
Blank (1017533-BLK1)	DDI		μg/k	g 20.0						
Aroclor-1016	BRL		µg/k	200)					
Aroclor-1016 [2C]	BRL		μg/k	201)					
Aroclor-1221	BRL		µg/k	20)					
Aroclor-1221 [2C]	BRL		μg/l		0					
Aroclor-1232	BRL		μg/l		0					
Aroclor-1232 [2C]	BRL		μg/	- 00						
Aroclor-1242	BRL		µg/							
Aroclor-1242 [2C]	BRL		µg/		0					
Aroclor-1248	BRL		µg/		.0					
Aroclor-1248 [2C]	BRL		ha.		.0					
Aroclor-1254	BRL		µg	00	.0					
Aroclor-1254 [2C]	BRL			/kg 20						
Aroclor-1260	BRL				.0					
Arocior-1260 [2C]	BRL				0.0					
Aroclor-1262	BRL				0.0					
Aroclor-1262 [2C]	BRL		10.00		0.0					
Aroclor-1268	BRI		45					CONTRACTOR OF THE PARTY OF THE		-11-5-

	atile Organ	Flag	Units	*RDL	Spike Level	Sourc	ce	REC	%REC Limits	RPD	RPD Limit	
alyte(s)	Result	1 145										
tch 1017533 - SW846 3540C					1	Prepared:	17-Aug-	10 Ana	lyzed: 18-A	<u>ug-10</u>		
Blank (1017533-BLK1)	201		μg/kg	20.0							_	
Aroclor-1268 [2C]	BRL				20.0			88	30-150			
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	17.5		μg/kg		20.0			84	30-150			
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	16.8		µg/kg		20.0)		100	30-150			
Surrogate: Decachlorobiphenyl (Sr)	19.9		µg/kg		20.0)		98	30-150	400-00-00-00-00-00-00-00-00-00-00-00-00-		
Surrogate: Decachlorobiphenyl (Sr) [2C]	19.6		µg/kg			Prepared	d: 17-Aug	-10 An	alyzed: 18-	Aug-10		
LCS (1017533-BS1)				20.0	250			84	50-140			
Aroclor-1016	209		µg/kg	20.0	250)		87	50-140			
Aroclor-1016 [2C]	217		µg/kg	20.0	25	0		75	50-140			
Aroclor-1260	188		µg/kg	20.0	25	0		90	50-140			
Aroclor-1260 [2C]	224		µg/kg		20	0		88	30-150			
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	17.6		µg/kg		20			90	30-150			
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	18.0		μg/kg			0.0		100	30-150			
Surrogate: 4,4-DB-Octalios/objects/ Surrogate: Decachlorobiphenyl (Sr)	19.9		µg/kg			0.0		104	30-150			
Surrogate: Decachiorobiphenyl (Sr) [2C]	20.8		µg/kg		20	Dranan	ed: 17-A	ug-10 A	Analyzed: 1	8-Aug-10		
								80	50-140	4		30
LCS Dup (1017533-BSD1)	201		µg/kg	20.0		50		87	50-140	0.5		30
Aroclor-1016	218		µg/kg	20.0	-	50		70	50-140	7		30
Aroclor-1016 [2C]	175		µg/kg	20.0	0-	50 50		90	50-14	0.6		30
Aroclor-1260	225		μg/kg	20.0	117	MANAGE TO THE SECOND		82	30-15	0		
Aroclor-1260 [2C]	16.4		µg/kg	e e		20.0		83	30-15			
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	16.6		μg/kg			20.0		94	30-15			
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	18.8		μg/kg			20.0		101	30-15			
Surrogate: Decachlorobiphenyl (Sr)	20.1		μg/kg		9	20.0	110000				l.	
Surrogate: Decachlorobiphenyl (Sr) [2C]	20		Source:	SB16704-	13	Prepa		Aug-10	Analyzed:	1011		40
<u>Duplicate (1017533-DUP1)</u>	BRL		µg/kg				BRL					40
Aroclor-1016	BRL		μg/kg	26	2		BRL					40
Aroclor-1016 [2C]	BRL		μg/kg	26	2		BRL					40
Aroclor-1221	BRL		μg/kg	26	2		BRL					40
Aroclor-1221 [2C]	BRL		µg/kg	26	2		BRL					40
Aroclor-1232	BRL		µg/kg	26	2		BRL					40
Aroclor-1232 [2C]	BRL		µg/kg	g 26	2		BRL					40
Aroclor-1242	BRL		µg/kg		52		BRL					40
Aroclor-1242 [2C]	BRL		µg/k		52		BRL					40
Aroclor-1248	BRL		μg/k	7.2	32		BRL			9	72	40
Aroclor-1248 [2C]	5120	Q	M4 μg/k		62		2410				53	40
Aroclor-1254	5440		M4 μg/k		62		3160					40
Aroclor-1254 [2C]	BRL		µg/k		62		BRL					40
Aroclor-1260	BRL		µg/l	7	62		BRL					40
Aroclor-1260 [2C]	BRL		μg/I	kg :	62		BRL					40
Aroclor-1262	BRL		µg/	kg	262		BRL					40
Aroclor-1262 [2C]	BRL		µ9/	kg	262		BRL					40
Aroclor-1268	BRL		рд/	'kg	262		BRL		1.	150		
Aroclor-1268 [2C]			hā,	/kg		262				150		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	157			/kg		262)-150)-150		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2	C] 230			/kg		262)-150)-150		
Surrogate: Decachlorobiphenyl (Sr)	200			/kg		262			93 3	J-150		
Surrogate: Decachlorobiphenyl (Sr) [2C]	244		79							27.5623250	- 40	
Batch 1017548 - SW846 3540C						<u>P</u>	repared:	17-Aug	10 Analyz	ed: 19-Aug	1-10	
Blank (1017548-BLK1)	922		110	g/kg	20.0							
Aroclor-1016	BRI			g/kg	20.0							
1 4046 (20)	aboratory rep		h?	5 n 3	0012							

Semivol	25.15			*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limi	
alyte(s)	Result	Flag	Units	KDL							
atch 1017548 - SW846 3540C					Pr	epared: 17-	Aug-10 Ana	lyzed: 19-A	ug-10		
Blank (1017548-BLK1)	221		μg/kg	20.0							
Aroclor-1221	BRL BRL		µg/kg	20.0							
Aroclor-1221 [2C]			μg/kg	20.0							
Aroclor-1232	BRL		µg/kg	20.0							
Aroclor-1232 [2C]	BRL		µg/kg	20.0							
Aroclor-1242	BRL		μg/kg	20.0							
Aroclor-1242 [2C]	BRL		μg/kg	20.0							
Aroclor-1248	BRL		µg/kg	20.0							
Aroclor-1248 [2C]	BRL		μg/kg	20.0							
Aroclor-1254	BRL		µg/kg	20.0							
Aroclor-1254 [2C]	BRL		μg/kg	20.0							
Aroclor-1260	BRL		µg/kg	20.0							
Aroclor-1260 [2C]	BRL		pg/kg	20.0							
Aroclor-1262	BRL		pg/kg	20.0							
Aroclor-1262 [2C]	BRL		µg/kg	20.0							
Aroclor-1268	BRL		ha\ka	20.0							
Aroclor-1268 [2C]	BRL				20.	0	99	30-150)		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	19.8		µg/kg		20.		84	30-15)		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	16.8		µg/kg		20.		102	30-15)		
Surrogate: 4,4-DB-Octaniolosis-French	20.4		µg/kg		20	0	70	30-15			
Surrogate: Decachlorobiphenyl (Sr)	14.0		µg/kg		20	Despared	17-Aug-10	Analyzed:	9-Aug-10	<u>)</u>	
Surrogate: Decachlorobiphenyl (Sr) [2C]							93	50-14	0		
LCS (1017548-BS1)	232		µg/kg	20.0	25		87	50-14	0		
Aroclor-1016	218		µg/kg	20.0	25		80	50-14			
Aroclor-1016 [2C]	199		µg/kg	20.0		50	76	50-14			
Aroclor-1260	189		μg/kg	20.0	2	50					
Aroclor-1260 [2C]			μg/kg		2	0.0	91	30-1			
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	18.2		μg/kg		2	0.0	82				
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	16.5		µg/kg		2	0.0	98	220			
Surrogate: Decachlorobiphenyl (Sr)	19.5		µg/kg		2	0.0	76				
Surrogate: Decachlorobiphenyl (Sr) [2C]	15.1		P93			Prepare	d: 17-Aug-10	Analyzed	19-Aug-	10	30
LCS Dup (1017548-BSD1)			ualka	20.0	0 3	250	96			3	3
Aroclor-1016	240		µg/kg	,		250	83			5	3
Aroclor-1016 [2C]	208		µg/kg	,		250	82			3	3
	206		μg/kg			250	73	50-	140	3	3
Aroclor-1260 Aroclor-1260 [2C]	183		μg/k	9 20.			10	7 30-	150		
	21.3		µg/k	g		20.0	7		150		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)			µg/k	g		20.0			150		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C	20.4		µg/k	g		20.0			150		
Surrogate: Decachlorobiphenyl (Sr) Surrogate: Decachlorobiphenyl (Sr) [2C]	13.1		µg/k	kg.		20.0		700			

Notes a	nd Definitions	timated value. This value is considered an estimate (CLP E-flag).
E	The concentration indicated for this analyte is an es	target analytes to be within the instrument calibration range.
GS1	Sample dilution required for high concentration of	e sample cannot be accurately calculated due to the high concentration
QM2	The RPD and/or percent recovery for this QC spike	White due to a non-homogeneous sample matrix.

of analyte inherent in the sample.

Visual evaluation of the sample indicates the RPD is above the control limit due to a non-homogeneous sample matrix.

The Reporting Limit has been raised to account for matrix interference. QM4 R01

The surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration S01

The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic S02

The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect. S04

The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration S06 and/or matrix interference's.

Below Reporting Limit - Analyte NOT DETECTED at or above the reporting limit BRL

Sample results reported on a dry weight basis dry

Not Reported NR

Relative Percent Difference

A plus sign (+) in the Method Reference column indicates the method is not accredited by NELAC.

Laboratory Control Sample (LCS): A known matrix spiked with compound(s) representative of the target analytes, which is used to document laboratory performance.

Matrix Duplicate: An intra-laboratory split sample which is used to document the precision of a method in a given sample matrix.

Matrix Spike: An aliquot of a sample spiked with a known concentration of target analyte(s). The spiking occurs prior to sample preparation and analysis. A matrix spike is used to document the bias of a method in a given sample matrix.

Method Blank: An analyte-free matrix to which all reagents are added in the same volumes or proportions as used in sample processing. The method blank should be carried through the complete sample preparation and analytical procedure. The method blank is used to document contamination resulting from the analytical process.

Method Detection Limit (MDL): The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix type containing the

Reportable Detection Limit (RDL): The lowest concentration that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions. For many analytes the RDL analyte concentration is selected as the lowest non-zero standard in the calibration curve. While the RDL is approximately 5 to 10 times the MDL, the RDL for each sample takes into account the sample volume/weight, extract/digestate volume, cleanup procedures and, if applicable, dry weight correction. Sample RDLs are highly matrix-dependent.

Surrogate: An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. These compounds are spiked into all blanks, standards, and samples prior to analysis. Percent recoveries are calculated for each surrogate.

Continuing Calibration Verification: The calibration relationship established during the initial calibration must be verified at periodic

Validated by: Hanibal C. Tayeh, Ph.D. Kimberly Wisk

Reasonable Confidence Protocols Laboratory Analysis QA/QC Certification Form Client: Facility Support Services, LLC

Laboratory Name: Spectrum Analytical, Inc.

Project Location: Quinnipiac University, CT

Sampling Date(s): 8/13/2010

Project Number: 32510 Laboratory Sample ID(s): SB16704-01 through SB16704-24

RCP Methods Used:

	Methods Used: 46 8082	
	the dispersion of the standard referenced in this laboratory report package, were all specified of acceptable	✓ Yes No
- 1	- : delines as specificum in the or	✓ Yes No
A	and holding time requirements mer	Yes No
В	Were the method specified preservation and nothing the view of the method specified preservation and nothing the view of the v	✓ Yes No
2	(see Section 11.3 of respective RCP methods)? Were all samples received by the laboratory in a condition consistent with that described on the associated chain-of-custody document(s)?	✓ Yes No
3	Were samples received at an appropriate temperature? Were all QA/QC performance criteria specified in the Reasonable Confidence Protocol documents	Yes ✓ No
4		Yes ✓ No
5	a) Were reporting limits specified or referenced on the chain-of-custody? * • Exceptions are defined by qualifiers b) Were these reporting limits met?	✓ Yes No
6	b) Were these reporting limits met? For each analytical method referenced in this laboratory report package, were results reported for all constituents identified in the method-specific analyte lists presented in the Reasonable Confidence Protocol constituents identified in the method-specific analyte lists presented in the Reasonable Confidence Protocol	V 165
J		✓ Yes N
7	documents? Are project-specific matrix spikes and laboratory duplicates included in this data set? Are project-specific matrix spikes and laboratory duplicates included in this data set?	n must be

Note: For all questions to which the response was "No" (with the exception of question #7), additional information must be provided in an attached narrative. If the answer to question #1, #1A, or #1B is "No", the data package does not meet the requirements for "Reasonable Confidence."

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for obtaining the information contained in this analytical report, such information is accurate and complete.

> Hanibal C. Tayeh, Ph.D. President/Laboratory Director

Date: 8/20/2010

Special Handling

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FACILITY SUPPORT SERVICES, LLC Asbestos Sampling Log

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FACILITY SUPPORT SERVICES, LLC

Asbestos Sampling Log

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Report Date: 03-Sep-10 18:08



Project: QU - Alumni Hall, CT

Final Report

☐ Re-Issued Report

☐ Revised Report

Project #: 32510

Facility Support Services, LLC 2685 State Street Hamden, CT 06517 Attn: Steve Daniels

Laboratory ID	Client Sample ID	Matrix	<u>Date Sampled</u> 26-Aug-10 10:55	Date Received 30-Aug-10 16:50
SB17436-01	32510082601	Brick	26-Aug-10 11:05	30-Aug-10 16:50
SB17436-02	32510082602	Brick Brick	26-Aug-10 11:15	30-Aug-10 16:50
SB17436-03	32510082603	Asphalt	26-Aug-10 11:25	30-Aug-10 16:50
SB17436-04	32510082604	Soil	26-Aug-10 11:35	30-Aug-10 16:50
SB17436-05	32510082605	Asphalt	26-Aug-10 11:55	30-Aug-10 16:50
SB17436-06	32510082606	Asphalt	26-Aug-10 12:05	30-Aug-10 16:50
SB17436-07	32510082607	Asphalt	26-Aug-10 12:10	30-Aug-10 16:50
SB17436-08	32510082608	Soil	26-Aug-10 12:20	30-Aug-10 16:50
SB17436-09	32510082609	Caulking	27-Aug-10 15:00	30-Aug-10 16:50
SB17436-10	32510082710	Concrete	27-Aug-10 15:15	30-Aug-10 16:50
SB17436-11	32510082711	Concrete	27-Aug-10 15:20	30-Aug-10 16:50
SB17436-12	32510082712	Concrete	27-Aug-10 15:25	30-Aug-10 16:50
SB17436-13	32510082713	Brick	27-Aug-10 15:50	30-Aug-10 16:50
SB17436-14	32510082714	Brick	27-Aug-10 16:00	30-Aug-10 16:50
SB17436-15	32510082715	Brick	27-Aug-10 16:10	30-Aug-10 16:50
SB17436-16	32510082716	Asphalt	28-Aug-10 10:17	30-Aug-10 16:50
SB17436-17	32510082817	Asphalt	28-Aug-10 10:28	30-Aug-10 16:50
SB17436-18	32510082818	Soil	28-Aug-10 10:37	30-Aug-10 16:50
SB17436-19	32510082819	Soil	28-Aug-10 10:51	30-Aug-10 16:50
SB17436-20	32510082820	Asphalt	28-Aug-10 11:01	30-Aug-10 16:50
SB17436-21	32510082821	Concrete	28-Aug-10 11:27	30-Aug-10 16:50
SB17436-22	32510082822	Concrete	28-Aug-10 11:40	30-Aug-10 16:50
SB17436-23	32510082823	25		

I attest that the information contained within the report has been reviewed for accuracy and checked against the quality control requirements for each method. These results relate only to the sample(s) as received.

All applicable NELAC requirements have been met.

All applicable NELAC requirements have been Massachusetts # M-MA138/MA1110

Connecticut # PH-0777 Florida # E87600/E87936

Maine # MA138

New Hampshire # 2538

New Jersey # MA011/MA012

New York # 11393/11840

Pennsylvania # 68-04426/68-02924

Rhode Island # 98

USDA # S-51435

Vermont # VT-11393



Authorized by:

Hanibal C. Tayeh, Ph.D. President/Laboratory Director

Technical Reviewer's Initial:



Spectrum Analytical holds certification in the State of New York for the analytes as indicated with an X in the "Cert." column within this report. Please note that the State of New York does not offer certification for all analytes.

Please note that this report contains 25 pages of analytical data plus Chain of Custody document(s). When the Laboratory Report is indicated as revised, this report supersedes any previously dated reports for the laboratory ID(s) referenced above. Where this report identifies subcontracted analyses, copies of the subcontractor's test report are available upon request. This report may not be reproduced, except in full, without written approval from Spectrum Analytical, Inc.

Spectrum Analytical, Inc. is a NELAC accredited laboratory organization and meets NELAC testing standards. Use of the NELAC logo however does not insure that Spectrum is currently accredited for the specific method or analyte indicated. Please refer to our "Quality" web page at www.spectrum-analytical.com for a full listing of our current certifications and fields of accreditation. States in which Spectrum Analytical, Inc. holds NELAC certification are New York, New Hampshire, New Jersey and Florida. All analytical work for Volatile Organic and Air analysis are transferred to and conducted at our 830 Silver Street location (NY-11840, FL-E87936 and NJ-MA012).

Please contact the Laboratory or Technical Director at 800-789-9115 with any questions regarding the data contained in this laboratory report.

CASE NARRATIVE:

The sample temperature upon receipt by Spectrum Analytical courier was recorded as 3.9 degrees Celsius. The samples were transported on ice to the laboratory facility and the temperature was recorded at 4.3 degrees Celsius upon receipt at the laboratory. Please refer to the Chain of Custody for details specific to sample receipt times.

An infrared thermometer with a tolerance of +/- 2.0 degrees Celsius was used immediately upon receipt of the samples.

If a Matrix Spike (MS), Matrix Spike Duplicate (MSD) or Duplicate (DUP) was not requested on the Chain of Custody, method criteria may have been fulfilled with a source sample not of this Sample Delivery Group.

See below for any non-conformances and issues relating to quality control samples and/or sample analysis/matrix.

SW846 8082

Samples:

SB17436-09

32510082609

The concentration indicated for this analyte is an estimated value. This value is considered an estimate (CLP E-flag).

Aroclor-1254 [2C]

SB17436-09RE1

32510082609

Sample dilution required for high concentration of target analytes to be within the instrument calibration range.

SB17436-10

32510082710

Sample dilution required for high concentration of target analytes to be within the instrument calibration range.

The surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interference's.

4,4-DB-Octafluorobiphenyl (Sr)

4,4-DB-Octafluorobiphenyl (Sr) [2C]

Decachlorobiphenyl (Sr)

Decachlorobiphenyl (Sr) [2C]

SB17436-11

32510082711

The concentration indicated for this analyte is an estimated value. This value is considered an estimate (CLP E-flag).

Aroclor-1254 [2C]

SB17436-11RE1

32510082711

Sample dilution required for high concentration of target analytes to be within the instrument calibration range.

The surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interference's.

4,4-DB-Octafluorobiphenyl (Sr)

4,4-DB-Octafluorobiphenyl (Sr) [2C]

Decachlorobiphenyl (Sr)

Decachlorobiphenyl (Sr) [2C]

SB17436-12

32510082712

The concentration indicated for this analyte is an estimated value. This value is considered an estimate (CLP E-flag).

Aroclor-1254 [2C]

SB17436-12RE1

32510082712

SW846 8082

Samples:

SB17436-12RE1 32510082712

Sample dilution required for high concentration of target analytes to be within the instrument calibration range.

SB17436-13 32510082713

The concentration indicated for this analyte is an estimated value. This value is considered an estimate (CLP E-flag).

Aroclor-1254 [2C]

SB17436-13RE1 32510082713

Sample dilution required for high concentration of target analytes to be within the instrument calibration range.

SB17436-14 32510082714

The concentration indicated for this analyte is an estimated value. This value is considered an estimate (CLP E-flag).

Aroclor-1254 [2C]

SB17436-14RE1 32510082714

Sample dilution required for high concentration of target analytes to be within the instrument calibration range.

SB17436-15 32510082715

The concentration indicated for this analyte is an estimated value. This value is considered an estimate (CLP E-flag).

Aroclor-1254 [2C]

SB17436-15RE1 32510082715

Sample dilution required for high concentration of target analytes to be within the instrument calibration range.

SB17436-16 32510082716

The concentration indicated for this analyte is an estimated value. This value is considered an estimate (CLP E-flag).

Aroclor-1254 [2C]

SB17436-16RE1 32510082716

Sample dilution required for high concentration of target analytes to be within the instrument calibration range.

SB17436-22 32510082822

The concentration indicated for this analyte is an estimated value. This value is considered an estimate (CLP E-flag).

Aroclor-1254 [2C]

SB17436-22RE1 32510082822

Sample dilution required for high concentration of target analytes to be within the instrument calibration range.

25100826			1.000	Project #		<u>Matrix</u> Brick		ction Date/ Aug-10 10:		Rece 30-A	eived ug-10	50 TUD - 100
B17436-0 AS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed .	Analyst	Batch	Cert.
100000000000000000000000000000000000000												
	e Organic Compounds by GC nated Biphenyls by SW846 8082											
olychlorir	by method SW846 3540C							30-Aug-10	02.Sep-10	SM	1018550	×
	Aroclor-1016	BRL		µg/kg	115	1	SW846 8082	30-Aug-10	"			х
1104-28-2	Aroclor-1221	BRL		µg/kg	115	1					*	X
1141-16-5	Aroclor-1232	BRL		µg/kg	115	1		200				X
3469-21-9	Aroclor-1242	BRL		µg/kg	115	1	#1 26					X
2672-29-6	Aroclor-1248	BRL		µg/kg	115	1				¥		X
	Aroclor-1254	10,300		µg/kg	115	1	*					X
1097-69-1		2,530		µg/kg	115	1	•	*				×
1096-82-5	Aroclor-1260	BRL		µg/kg	115	1	•	*			0.000	×
7324-23-5	Aroclor-1262 Aroclor-1268	BRL		µg/kg	115	1	,		•			^
	recoveries:	88			30-150 %		•	29	1.77			
0386-84-2	4,4-DB-Octafluorobiphenyl (Sr)				30-150 %	1.83					"	
0386-84-2		87										
2051-24-3	[2C] Decachlorobiphenyl (Sr)	100			30-150 %							
	Decachlorobiphenyl (Sr) [2C]	87			30-150 %		•					
2051-24-3	Decachiorophieny (or) [2-9]											
	dentification		ou	D :	1	Matrix	Col	lection Dat	e/Time	Re	eceived	
32510082			100	nt Project #		Brick		6-Aug-10		30-	Aug-10	
SB17436			į	32510		Divisi		4000				
		Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepare	d Analyzea	l Analys.	t Batch	Cer
CAS No.	Analyte(s)											
	tile Organic Compounds by GC	1										
Polychlo	rinated Biphenyls by SW846 8082 d by method SW846 3540C	É						92 4		o SM	101855	50 X
	2 Aroclor-1016	BRL		µg/kg	95.3	1	SW846 8082		0 02-Sep-1	U SIVI	101000	, o ,
		BRL		µg/kg	95.3	1		(H)	100			>
11104-28-2		BRL		μg/kg	95.3	1	*	*	1. M. S.		**	,
	5 Aroclor-1232	BRL		µg/kg	95.3	1			•	988		
53469-21-9		BRL		µg/kg	95.3	1	-	**	*		103	
12672-29-		8,270		µg/kg	95.3	1						
	1 Aroclor-1254			μg/kg	95.3	1	*			**		
11097-69-				Parina				*		**		
11097-69- 11096-82-	5 Aroclor-1260	2,310		ug/kg	95.3						16	- 1
		BRL		μg/kg	95.3 95.3	1		*				
11096-82-	5 Aroclor-1262			µg/kg µg/kg	95.3 95.3	1	M	•	н.:		2000	
11096-82- 37324-23- 11100-14-	5 Aroclor-1262 4 Aroclor-1268	BRL			95.3	1						
11096-82- 37324-23- 11100-14- Surrogat	5 Aroclor-1262	BRL	S		95.3	1	м					
11096-82- 37324-23- 11100-14- Surrogat	5 Aroclor-1262 4 Aroclor-1268 be recoveries: -2 4,4-DB-Octafluorobiphenyl (Sr) -2 4,4-DB-Octafluorobiphenyl (Sr)	BRL BRL			95.3	1						
11096-82- 37324-23- 11100-14- Surrogat 10386-84- 10386-84	5 Aroclor-1262 4 Aroclor-1268 be recoveries: -2 4,4-DB-Octafluorobiphenyl (Sr) -2 4,4-DB-Octafluorobiphenyl (Sr) [2C]	BRL BRL 86 88	5		95.3	1 6 6	:					
11096-82- 37324-23- 11100-14- Surrogat 10386-84-	5 Aroclor-1262 4 Aroclor-1268 be recoveries: -2 4,4-DB-Octafluorobiphenyl (Sr) -2 4,4-DB-Octafluorobiphenyl (Sr) [2C] Decachlorobiphenyl (Sr)	BRL BRL			95.3 30-150 % 30-150 %	1 6 6						

ample Ide 251008260	ntification 03			Project # 510		<u>Matrix</u> Brick		ction Date/D Aug-10 11:		Rece 30-Au		
B17436-0	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed A	Inalyst	Batch	Cert.
	e Organic Compounds by GC											
emivolatii	ated Biphenyls by SW846 8082											
congred b	y method SW846 3540C							30-Aug-10	02-Sep-10	SM 1	018550	X
	Aroclor-1016	BRL		µg/kg	87.2	1	SW846 8082	" "	"			X
	Aroclor-1221	BRL		µg/kg	87.2	1			34			X
	Aroclor-1232	BRL		µg/kg	87.2	1					*	×
3469-21-9	Aroclor-1242	BRL		µg/kg	87.2	1						X
2672-29-6	Aroclor-1248	BRL		µg/kg	87.2	1						X
1097-69-1	Aroclor-1254	7,970		µg/kg	87.2	1	•			#0		X
	Aroclor-1260	2,640		µg/kg	87.2	1						×
1096-82-5		BRL		µg/kg	87.2	1	•		*		**	×
37324-23-5 11100-14-4	Aroclor-1262 Aroclor-1268	BRL		µg/kg	87.2	1					3000	
									¥		1040	
Surrogate r	ecovenes:	82			30-150 %		**					
	4,4-DB-Octafluorobiphenyl (Sr)	86			30-150 %			*				
0386-84-2	4,4-DB-Octafluorobiphenyl (Sr) [2C]											
2051-24-3	Decachlorobiphenyl (Sr)	80			30-150 %					-	*	
2051-24-3	Decachlorobiphenyl (Sr) [2C]	90			30-150 %							
Sample Io 32510082 SB17436				<u>nt Project #</u> 32510		Matrix Asphalt		lection Date 6-Aug-10 1	1:25	30-	ceived Aug-10	
CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	d Analyzed	Analysi	Batci	ı Cer
	tile Organic Compounds by GC											
Semivolat	inated Biphenyls by SW846 808	2										
Prepared	by method SW846 3540C	-					SW846 8082	30-Aug-1	0 02-Sep-10	SM	10185	50 X
	Aroclor-1016	BRL		µg/kg	331	1	500040 0002	30 7 lug .				X
11104-28-2		BRL		µg/kg	331	1				**	W	×
	Aroclor-1232	BRL		µg/kg	331	1					×	×
53469-21-9		BRL		µg/kg	331	1		- 100 	н	н		×
	Aroclor-1248	BRL		µg/kg	331	1					-	>
		442		µg/kg	331	1						>
11097-69-		BRL		µg/kg	331	1			// //			,
	5 Aroclor-1260	BRL		μg/kg	331	1			2.00			>
37324-23-		BRL		μg/kg	331	1			10.50 F. Agros et 1.	W)		
11100-14-	7 100 100 100 100 100 100 100 100 100 10	- 107									_	
Surrogate	e recoveries:	80			30-150 %	6	*		*		1.71	
	2 4,4-DB-Octafluorobiphenyl (Sr)				30-150 %	6	×		•	н		
10386-84-	-2 4,4-DB-Octafluorobiphenyl (Sr)	83					100		×		,	
0054 04 0	[2C] Decachlorobiphenyl (Sr)	72			30-150 %	6		-	*			
2051-24-3		80			30-150 %	6		iii.				
2051-24-3	Decaciliorophieny (57) [29]											

32510082 SB17436-				t Project # 32510		<u>Matrix</u> Soil		ection Date/ -Aug-10 11			ceived Aug-10	
CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Semivolati	ile Organic Compounds by GC											
	inated Biphenyls by SW846 8082											
	by method SW846 3540C	551		ualka dar	21.6	1	SW846 8082	30-Aug-10	31-Aug-10	IMR	1018549	Х
	Aroclor-1016	BRL BRL		µg/kg dry µg/kg dry	21.6	1	"	"	,		н	X
11104-28-2 11141-16-5	Arodor-1221	BRL		pg/kg dry	21.6	1	*					X
53469-21-9	Aroclor-1232 Aroclor-1242	BRL		µg/kg dry	21.6	1	(9)				*	X
12672-29-6	Arodor-1248	BRL		µg/kg dry	21.6	1						×
11097-69-1	Aroclor-1254	218		μg/kg dry	21.6	1						X
11096-82-5	Arodor-1260	109		µg/kg dry	21.6	1		и				×
37324-23-5	Aroclor-1262	BRL		µg/kg dry	21.6	1	**		*	200		×
	Aroclor-1268	BRL		µg/kg dry	21.6	1				*	•	Х
	recoveries: 4,4-DB-Octafluorobiphenyl (Sr)	82			30-150 %				*	#C	38	
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr)	85			30-150 %		•			9		
2054 24 2	[2C]	82			30-150 %					100		
2051-24-3	Decachlorobiphenyl (Sr) Decachlorobiphenyl (Sr) [2C]	83			30-150 %				*			
		03			/ /-							
General C	Chemistry Parameters % Solids	90.5		%		1	SM2540 G Mod.	31-Aug-10	31-Aug-10	BD	1018588	
	49											
				<u>t Project #</u> 32510		<u>Matrix</u> Asphalt		ection Date -Aug-10 11			ceived Aug-10	
32510082	606	Result			*RDL			-Aug-10 11		30-	Aug-10	Cert.
32510082 SB17436- CAS No.	.606 -06 Analyte(s)	Result		32510	*RDL	Asphalt	26	-Aug-10 11	1:55	30-	Aug-10	Cert.
32510082 SB17436- CAS No. Semivolati	Analyte(s) ile Organic Compounds by GC	Result		32510	*RDL	Asphalt	26	-Aug-10 11	1:55	30-	Aug-10	Cert.
32510082 SB17436- CAS No. Semivolati	.606 -06 Analyte(s)	Result		32510	*RDL	Asphalt	26	-Aug-10 11	Analyzed	30	Aug-10	Cert.
32510082 SB17436- CAS No. Semivolati Polychlori Prepared	Analyte(s) ile Organic Compounds by GC inated Biphenyls by SW846 8082	Result BRL		32510	* <i>RDL</i>	Asphalt	26	-Aug-10 11	1:55	30 Analyst	Aug-10 Batch	×
32510082 SB17436- CAS No. Semivolati Polychlori Prepared 12674-11-2	Analyte(s) ile Organic Compounds by GC inated Biphenyls by SW846 8082 by method SW846 3540C			Units		Asphalt Dilution	26 Method Ref.	-Aug-10 11	Analyzed	30	Aug-10 Batch	×
32510082 SB17436- CAS No. Semivolati Polychlori Prepared 12674-11-2	Analyte(s) ile Organic Compounds by GC inated Biphenyls by SW846 8082 by method SW846 3540C Aroclor-1016 Aroclor-1221	BRL		Units	386	Asphalt Dilution	26 Method Ref. SW846 8082	Prepared 30-Aug-10	Analyzed 02-Sep-10	30 Analyst	Aug-10 Batch	X X X
32510082 SB17436- CAS No. Semivolati Polychlori Prepared 12674-11-2 11104-28-2	Analyte(s) ile Organic Compounds by GC inated Biphenyls by SW846 8082 by method SW846 3540C Aroclor-1016 Aroclor-1221	BRL BRL		Units	386 386	Asphalt Dilution	26 Method Ref. SW846 8082	Prepared 30-Aug-10	Analyzed 02-Sep-10	30 Analyst	Aug-10 Batch	x x x
32510082 SB17436- CAS No. Semivolati Polychlori Prepared 12674-11-2 11104-28-2 11141-16-5	Analyte(s) ile Organic Compounds by GC inated Biphenyls by SW846 8082 by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1232	BRL BRL BRL		Units Units µg/kg µg/kg µg/kg	386 386 386	Asphalt Dilution	26 Method Ref. SW846 8082	Prepared 30-Aug-10	Analyzed 02-Sep-10	30 Analyst	Aug-10 Batch	X X X
32510082 SB17436- CAS No. Semivolati Polychlori Prepared 12674-11-2 11104-28-2 11141-16-5 53469-21-9	Analyte(s) ile Organic Compounds by GC inated Biphenyls by SW846 8082 by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1232 Aroclor-1242	BRL BRL BRL		Units Units µg/kg µg/kg µg/kg µg/kg	386 386 386 386	Asphalt Dilution	26 Method Ref. SW846 8082	Prepared 30-Aug-10	Analyzed 02-Sep-10	30 Analyst	Aug-10 Batch	x x x x x
32510082 SB17436- CAS No. Semivolati Polychlori Prepared 12674-11-2 11104-28-2 11141-16-5 53469-21-9 12672-29-6	Analyte(s) ile Organic Compounds by GC inated Biphenyls by SW846 8082 by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1232 Aroclor-1242 Aroclor-1248	BRL BRL BRL BRL		Units µg/kg µg/kg µg/kg µg/kg µg/kg µg/kg	386 386 386 386 386	Asphalt Dilution 1 1 1 1 1	26 Method Ref. SW846 8082	Prepared 30-Aug-10	2:55 Analyzed 02-Sep-10	30-, Analyst	Aug-10 Batch 1018550	× × × × × × ×
32510082 SB17436- CAS No. Semivolati Polychlori Prepared 12674-11-2 11104-28-2 11141-16-5 53469-21-9 12672-29-6 11097-69-1	Analyte(s) ile Organic Compounds by GC inated Biphenyls by SW846 8082 by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1232 Aroclor-1242 Aroclor-1248 Aroclor-1254	BRL BRL BRL BRL 481		Units µg/kg µg/kg µg/kg µg/kg µg/kg µg/kg	386 386 386 386 386 386	Asphalt Dilution 1 1 1 1 1 1	26 Method Ref. SW846 8082	-Aug-10 11 Prepared 30-Aug-10	2:55 Analyzed 02-Sep-10	30-, Analyst	Aug-10 Batch 1018550	x x x x x x
32510082 SB17436- CAS No. Semivolati Polychlori Prepared 12674-11-2 11104-28-2 11141-16-5 53469-21-9 12672-29-6 11097-69-1 11096-82-5	Analyte(s) ile Organic Compounds by GC inated Biphenyls by SW846 8082 by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1232 Aroclor-1242 Aroclor-1248 Aroclor-1254 Aroclor-1256	BRL BRL BRL BRL 481 BRL		Units µg/kg µg/kg µg/kg µg/kg µg/kg µg/kg µg/kg	386 386 386 386 386 386 386	Asphalt Dilution 1 1 1 1 1 1 1 1 1	26 Method Ref. SW846 8082	-Aug-10 11 Prepared 30-Aug-10	2:55 Analyzed 02-Sep-10	30-, Analyst	Aug-10 Batch 1018550	× × × × × × ×
32510082 SB17436- CAS No. Semivolati Polychlori Prepared 12674-11-2 11104-28-2 11141-16-5 53469-21-9 12672-29-6 11097-69-1 11096-82-5 37324-23-5 11100-14-4	Analyte(s) ile Organic Compounds by GC inated Biphenyls by SW846 8082 by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1232 Aroclor-1242 Aroclor-1248 Aroclor-1254 Aroclor-1260 Aroclor-1262 Aroclor-1268	BRL BRL BRL BRL BRL 481 BRL BRL		Pg/kg Pg/kg Pg/kg Pg/kg Pg/kg Pg/kg Pg/kg Pg/kg Pg/kg	386 386 386 386 386 386 386	Asphalt Dilution 1	26 Method Ref. SW846 8082	-Aug-10 11 Prepared 30-Aug-10	2:55 Analyzed 02-Sep-10	30-, Analyst	Aug-10 Batch 1018550	x x x x x x
32510082 SB17436- CAS No. Semivolati Polychlori Prepared 12674-11-2 11104-28-2 11141-16-5 53469-21-9 12672-29-6 11097-69-1 11096-82-5 37324-23-5 11100-14-4 Surrogate	Analyte(s) ile Organic Compounds by GC inated Biphenyls by SW846 8082 by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1232 Aroclor-1242 Aroclor-1248 Aroclor-1254 Aroclor-1254 Aroclor-1260 Aroclor-1262	BRL BRL BRL BRL BRL 481 BRL BRL		Pg/kg Pg/kg Pg/kg Pg/kg Pg/kg Pg/kg Pg/kg Pg/kg Pg/kg	386 386 386 386 386 386 386	Asphalt Dilution 1	26 Method Ref. SW846 8082	-Aug-10 11 Prepared 30-Aug-10	2:55 Analyzed 02-Sep-10	30-, Analyst	Aug-10 Batch 1018550	x x x x x x
32510082 SB17436- CAS No. Semivolati Polychlori Prepared 12674-11-2 11104-28-2 11141-16-5 53469-21-9 12672-29-6 11097-69-1 11096-82-5 37324-23-5 11100-14-4 Surrogate	Analyte(s) ile Organic Compounds by GC inated Biphenyls by SW846 8082 by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1232 Aroclor-1242 Aroclor-1248 Aroclor-1254 Aroclor-1260 Aroclor-1262 Aroclor-1268 recoveries: 4,4-DB-Octafluorobiphenyl (Sr) 4,4-DB-Octafluorobiphenyl (Sr)	BRL BRL BRL BRL 481 BRL BRL BRL		Pg/kg Pg/kg Pg/kg Pg/kg Pg/kg Pg/kg Pg/kg Pg/kg Pg/kg	386 386 386 386 386 386 386 386	Asphalt Dilution 1	26 Method Ref. SW846 8082	-Aug-10 11 Prepared 30-Aug-10	2:55 Analyzed 02-Sep-10	30-, Analyst	Aug-10 Batch 1018550	x x x x x x
32510082 SB17436- CAS No. Semivolati Polychlori Prepared 12674-11-2 11104-28-2 11141-16-5 53469-21-9 12672-29-6 11097-69-1 11096-82-5 37324-23-5 11100-14-4 Surrogate 10386-84-2	Analyte(s) ile Organic Compounds by GC inated Biphenyls by SW846 8082 by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1232 Aroclor-1242 Aroclor-1248 Aroclor-1254 Aroclor-1254 Aroclor-1260 Aroclor-1268 recoveries: 4,4-DB-Octafluorobiphenyl (Sr)	BRL BRL BRL BRL 481 BRL BRL BRL		Pg/kg Pg/kg Pg/kg Pg/kg Pg/kg Pg/kg Pg/kg Pg/kg Pg/kg	386 386 386 386 386 386 386 386 386	Asphalt Dilution 1	26 Method Ref. SW846 8082	-Aug-10 11 Prepared 30-Aug-10	2:55 Analyzed 02-Sep-10	30-, Analyst	Aug-10 Batch 1018550	x x x x x x

mple Ide 5100826	entification 07		_	Project#		<u>Matrix</u> Asphalt	Collection 26-	ction Date/ Aug-10 12:	<u>Гіте</u> 05		eived aug-10	
317436-0	100	Result	Flag	Units	*RDL I	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
4S No.	Analyte(s)	Resuit	1 1445									
mivolatil	e Organic Compounds by GC											
olychlorir	nated Biphenyls by SW846 8082									200		
repared b	by method SW846 3540C	201		µg/kg	343	1	SW846 8082	30-Aug-10	02-Sep-10	SM	1018550	
674-11-2	Aroclor-1016	BRL		µg/kg	343	1	•	•				×
1104-28-2	Aroclor-1221	BRL		µg/kg	343	1	₩.	**	**		(*)	×
1141-16-5	Aroclor-1232	BRL		1075 107	343	1		×	*	•	•	X
3469-21-9	Aroclor-1242	BRL		µg/kg	343	1	28		*		•	X
2672-29-6	Aroclor-1248	BRL		µg/kg	343	1	TW.				*	X
1097-69-1	Aroclor-1254	BRL		µg/kg	970-00000	1			1.00		*	×
1096-82-5	Aroclor-1260	BRL		µg/kg	343					0.00		X
7324-23-5	Aroclor-1262	BRL		µg/kg	343	1					3.0	X
1100-14-4	Aroclor-1268	BRL		μg/kg	343	1						
	200000000000000000000000000000000000000								40			
	recoveries:	75			30-150 %		•			**		
0386-84-2	-5.00	80			30-150 %		*	70				
0386-84-2											W)	
051-24-3	[2C] Decachlorobiphenyl (Sr)	64			30-150 %			-	*			
051-24-3	Decachlorobiphenyl (Sr) [2C]	67			30-150 %							
	<u>Identification</u>		-	nt Project #		<u>Matrix</u> Asphal		llection Da			Received 0-Aug-1	
3251008				32510		Aspilai	.					
SB17436	6-08				*RDL	Dit den		Prepare	d Analyze	d Analy	st Bate	h Cer
aug M							Method Kel.	Liching				
CAS No.	Analyte(s)	Result	Flag	Units	"KDL	Dilution	Method Ref.	Trepure				
CAS No.		Result	Flag	Units	RDL	Ditution	Method Rej.	Trepure				
Semivola	ntile Organic Compounds by GC		Flag	Units	-KDL	Dilution	Method Rej.	Терше				
Semivola	ntile Organic Compounds by GC	2	Flag		4	31	Method Rej.		10 02-Sep-			
Semivola	ntile Organic Compounds by GC orinated Biphenyls by SW846 808 d by method SW846 3540C	<u>2</u> BRL	Flag	µg∕kg	319	1						>
Semivola Polychlo Prepare	ntile Organic Compounds by GC orinated Biphenyls by SW846 808 d by method SW846 3540C 2 Aroclor-1016	2	Flag	hā\ķā	319 319	1	SW846 8082		10 02-Sep-	10 SM		>
Semivola Polychlo Prepare 12674-11- 11104-28-	ntile Organic Compounds by GC orinated Biphenyls by SW846 808 d by method SW846 3540C 2 Aroclor-1016	<u>2</u> BRL	Flag	hā\ķā hā\ķā hā\ķā	319 319 319	1	SW846 8082		10 02-Sep-	10 SM)
Semivola Polychlo Prepare 12674-11- 11104-28- 11141-16-	ntile Organic Compounds by GC prinated Biphenyls by SW846 808 d by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1232	2 BRL BRL	Flag	ha\ka ha\ka ha\ka	319 319 319 319	1 1 1 1	SW846 8082	2 30-Aug- "	10 02-Sep-	10 SM	1 1018:)
Semivola Polychlo Prepare 12674-11- 11104-28- 11141-16- 53469-21-	ntile Organic Compounds by GC prinated Biphenyls by SW846 808 d by method SW846 3540C 2 Aroclor-1016 2 Aroclor-1221 5 Aroclor-1232 9 Aroclor-1242	BRL BRL BRL	Flag	hā\ķā hā\ķā hā\ķā	319 319 319 319 319	1 1 1 1	SW846 8082	2 30-Aug- "	10 02-Sep-	10 SM	1 1018:))
Semivola Polychlo Prepare 12674-11- 11104-28- 11141-16- 53469-21- 12672-29-	atile Organic Compounds by GC brinated Biphenyls by SW846 808 d by method SW846 3540C 2 Aroclor-1016 2 Aroclor-1221 5 Aroclor-1232 9 Aroclor-1242 6 Aroclor-1248	BRL BRL BRL BRL	Flag	ha\ka ha\ka ha\ka	319 319 319 319	1 1 1 1	SW846 8082	2 30-Aug- "	10 02-Sep-	10 SM	1 1018:	3
Semivola Polychlc Prepare 12674-11- 11104-28- 11141-16- 53469-21- 12672-29- 11097-69	atile Organic Compounds by GC brinated Biphenyls by SW846 808 d by method SW846 3540C 2 Aroclor-1016 2 Aroclor-1221 5 Aroclor-1232 9 Aroclor-1242 6 Aroclor-1248 -1 Aroclor-1254	BRL BRL BRL BRL BRL	Flag	ha\ka ha\ka ha\ka ha\ka	319 319 319 319 319	1 1 1 1 1	SW846 808:	2 30-Aug- "	10 02-Sep-	10 SM	1018	>
Semivola Polychlc Prepare 12674-11- 11104-28- 11141-16- 53469-21- 12672-29- 11097-69- 11096-82	atile Organic Compounds by GC orinated Biphenyls by SW846 808 d by method SW846 3540C 2 Aroclor-1016 2 Aroclor-1221 -5 Aroclor-1232 -9 Aroclor-1242 -6 Aroclor-1248 -1 Aroclor-1254 -5 Aroclor-1260	BRL BRL BRL BRL BRL 2,380	Flag	ha\ka ha\ka ha\ka ha\ka ha\ka	319 319 319 319 319 319	1 1 1 1 1 1	SW846 808;	2 30-Aug- "	10 02-Sep-	10 SM	1018	>
Semivola Polychlo Prepare 12674-11- 11104-28- 11141-16- 53469-21- 12672-29- 11097-69- 11096-82- 37324-23	atile Organic Compounds by GC brinated Biphenyls by SW846 808 d by method SW846 3540C 2 Aroclor-1016 2 Aroclor-1221 -5 Aroclor-1232 -9 Aroclor-1242 -6 Aroclor-1248 -1 Aroclor-1254 -5 Aroclor-1260 -5 Aroclor-1262	BRL BRL BRL BRL BRL BRL BRL 2,380	Flag	ha\ka ha\ka ha\ka ha\ka ha\ka	319 319 319 319 319 319	1 1 1 1 1	SW846 808:	2 30-Aug- "	10 02-Sep-	10 SM	1018	>
Semivola Polychlo Prepare 12674-11- 11104-28- 11141-16- 53469-21- 12672-29- 11097-69- 11096-82- 37324-23- 11100-14-	atile Organic Compounds by GC orinated Biphenyls by SW846 808 d by method SW846 3540C 2 Aroclor-1016 2 Aroclor-1221 5 Aroclor-1232 9 Aroclor-1242 6 Aroclor-1248 -1 Aroclor-1254 -5 Aroclor-1260 -5 Aroclor-1262 -4 Aroclor-1268	BRL BRL BRL BRL BRL 2,380 BRL BRL	Flag	halya halya halya halya halya halya halya halya halya halya	319 319 319 319 319 319 319	1 1 1 1 1 1	SW846 808:	2 30-Aug- "	10 02-Sep-	10 SM	1018	>
Semivola Polychlo Prepare 12674-11- 11104-28- 11141-16- 53469-21- 12672-29- 11097-69- 11096-82- 37324-23- 11100-14- Surroga	atile Organic Compounds by GC brinated Biphenyls by SW846 808 d by method SW846 3540C 2 Aroclor-1016 2 Aroclor-1221 5 Aroclor-1232 9 Aroclor-1242 6 Aroclor-1248 -1 Aroclor-1254 -5 Aroclor-1260 -5 Aroclor-1262 -4 Aroclor-1268	BRL BRL BRL BRL BRL 2,380 BRL BRL BRL	Flag	halya halya halya halya halya halya halya halya halya halya	319 319 319 319 319 319 319	1 1 1 1 1 1 1	SW846 808:	2 30-Aug- "	10 02-Sep-	10 SM	1018	>
Semivola Polychic Prepare 12674-11- 11104-28- 11141-16- 53469-21- 12672-29- 11096-82 37324-23 11100-14- Surroga 10386-84	atile Organic Compounds by GC orinated Biphenyls by SW846 808 d by method SW846 3540C 2 Aroclor-1016 2 Aroclor-1221 -5 Aroclor-1232 -9 Aroclor-1242 -6 Aroclor-1248 -1 Aroclor-1254 -5 Aroclor-1260 -5 Aroclor-1260 -5 Aroclor-1262 -4 Aroclor-1268	BRL BRL BRL BRL 2,380 BRL BRL BRL	Flag	halya halya halya halya halya halya halya halya halya halya	319 319 319 319 319 319 319 319	1 1 1 1 1 1 1	SW846 808:	2 30-Aug- "	10 02-Sep-	10 SM	1018	>
Semivola Polychic Prepare 12674-11- 11104-28- 11141-16- 53469-21- 12672-29- 11096-82 37324-23 11100-14 Surroga 10386-84	atile Organic Compounds by GC brinated Biphenyls by SW846 808 d by method SW846 3540C 2 Aroclor-1016 2 Aroclor-1221 -5 Aroclor-1232 -9 Aroclor-1242 -6 Aroclor-1248 -1 Aroclor-1254 -5 Aroclor-1260 -5 Aroclor-1260 -5 Aroclor-1262 -4 Aroclor-1268	BRL BRL BRL BRL BRL 2,380 BRL BRL BRL	Flag	halya halya halya halya halya halya halya halya halya halya	319 319 319 319 319 319 319 319	1 1 1 1 1 1 1	SW846 808:	2 30-Aug- "	10 02-Sep-	10 SM	1018	
Semivola Polychlo Prepare 12674-11- 11104-28- 11141-16- 53469-21- 12672-29- 11097-69- 11096-82- 37324-23- 11100-14- Surroga 10386-84- 10386-84-	atile Organic Compounds by GC orinated Biphenyls by SW846 808 d by method SW846 3540C 2 Aroclor-1016 2 Aroclor-1221 5 Aroclor-1232 9 Aroclor-1242 6 Aroclor-1248 -1 Aroclor-1254 -5 Aroclor-1260 -5 Aroclor-1262 -4 Aroclor-1268	BRL BRL BRL BRL 2,380 BRL BRL BRL 78	Flag	halya halya halya halya halya halya halya halya halya halya	319 319 319 319 319 319 319 319	1 1 1 1 1 1 1 1	SW846 808:	2 30-Aug- "	10 02-Sep-	10 SM	1018	
Semivola Polychic Prepare 12674-11- 11104-28- 11141-16- 53469-21- 12672-29- 11096-82 37324-23 11100-14 Surroga 10386-84	atile Organic Compounds by GC brinated Biphenyls by SW846 808 d by method SW846 3540C 2 Aroclor-1016 2 Aroclor-1221 5 Aroclor-1232 9 Aroclor-1242 6 Aroclor-1248 -1 Aroclor-1254 -5 Aroclor-1260 -5 Aroclor-1260 -5 Aroclor-1268	BRL BRL BRL BRL 2,380 BRL BRL BRL	Flag	halya halya halya halya halya halya halya halya halya halya	319 319 319 319 319 319 319 30-150 %	1 1 1 1 1 1 1 1	SW846 808:	2 30-Aug- "	10 02-Sep-	10 SM	1018	

Sample Ide 325100826 SB17436-6				2510		Matrix Soil		ction Date/ Aug-10 12			<u>ceived</u> Aug-10	
CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Semivolatil	le Organic Compounds by GC											
	nated Biphenyls by SW846 8082											
Prepared I	by method SW846 3540C								24 Aug 10	IMR	1018549	X
12674-11-2	Aroclor-1016	BRL		µg/kg dry	21.2	1		30-Aug-10	31-Aug-10	n n	"	X
11104-28-2	Aroclor-1221	BRL		µg/kg dry	21.2	1						X
11141-16-5	Aroclor-1232	BRL		µg/kg dry	21.2	1				14		X
53469-21-9	Aroclor-1242	BRL		µg/kg dry	21.2	1	•					X
12672-29-6	Aroclor-1248	BRL		μg/kg dry	21.2	1				н		X
11097-69-1	Aroclor-1254	7,830	E	µg/kg dry	21.2	1	•					×
11096-82-5	Aroclor-1260	2,160		µg/kg dry	21.2	1	*		1.7			
37324-23-5	Aroclor-1262	BRL		µg/kg dry	21.2	1			5000			X
11100-14-4	Aroclor-1268	BRL		µg/kg dry	21.2	1			*			Х
Surrogate i	recoveries:											
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr)	84			30-150 %							
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr) [2C]	87			30-150 %					**		
2051-24-3	Decachlorobiphenyl (Sr)	106			30-150 %				0.70			
2051-24-3	Decachlorobiphenyl (Sr) [2C]	80			30-150 %		•					
Re-analys	sis of Polychlorinated Biphenyls b	y SW846 8082	GS1									
Prepared	by method SW846 3540C				20,000		SW846 8082	20 Aug 1/	01-Sep-10) IMR	101854	9 X
12674-11-2	Aroclor-1016	BRL		µg/kg dry	212	10	500046 0002	" "	, 01-00p 11			X
11104-28-2	Aroclor-1221	BRL		µg/kg dry	212	10		w				×
11141-16-5	Aroclor-1232	BRL		µg/kg dry	212	10				30	0.00	×
53469-21-9	Aroclor-1242	BRL		µg/kg dry	212	10						×
12672-29-6	Aroclor-1248	BRL		µg/kg dry	212	10						×
11097-69-1	Aroclor-1254	8,730		μg/kg dry	212	10						×
11096-82-5	Aroclor-1260	2,100		μg/kg dry	212	10						<i>,</i>
37324-23-5	Aroclor-1262	BRL		μg/kg dry	212	10	5 # 25					>
11100-14-4	Aroclor-1268	BRL		µg/kg dry	212	10	"					
Surrogate	recoveries:						0.000			1987	*	
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr)	110			30-150 %			98.0	()			
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr) [2C]	100			30-150 %			6 <u>2</u> 23				
2051-24-3	Decachlorobiphenyl (Sr)	95			30-150 %			963	220	(%)		
2051-24-3	Decachlorobiphenyl (Sr) [2C]	115			30-150 %				(*)		-	
General 6	Chemistry Parameters						SM2540 G Mod	200220000		0 BD	101858	00

Sample Identification 32510082710		Client Project # 32510			Matrix Caulking		ection Date/ -Aug-10 15		30-Aug-10			
SB17436-1	.0			** **	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
CAS No.	Analyte(s)	Result	Flag	Units	KDL	Dilation						
Polychlorin	e Organic Compounds by GC nated Biphenyls by SW846 8082		GS1									
Prepared b	by method SW846 3540C			ua/ka	137000	1000	SW846 8082	30-Aug-10	02-Sep-10	SM	1018550	
12674-11-2	Aroclor-1016	BRL		µg/kg	137000	1000		•	"	W	7.	×
11104-28-2	Aroclor-1221	BRL		µg/kg	137000	1000				**	*	X
11141-16-5	Aroclor-1232	BRL		µg/kg	137000	1000			100		39	X
53469-21-9	Aroclor-1242	BRL		µg/kg		1000				**		X
12672-29-6	Aroclor-1248	BRL		µg/kg	137000					**	**	X
11097-69-1	Aroclor-1254	27,300,000		µg/kg	137000	1000						X
11096-82-5	Aroclor-1260	BRL		µg/kg	137000	1000			×			X
37324-23-5	Aroclor-1262	BRL		µg/kg	137000	1000					#0	X
11100-14-4	Aroclor-1268	BRL		µg/kg	137000	1000		591 				
Surrogate	recoveries:							S _H	*			
10386-84-2	1.6.1	0	S01		30-150 %				-			
10386-84-2	S S S SESSE SESSESSES SESSESSES	0	S01		30-150 %							
00000000	Sees the shiphanyl (Sr)	0	S01		30-150 %				741			

30-150 %

S01

0

2051-24-3 Decachlorobiphenyl (Sr)

2051-24-3 Decachlorobiphenyl (Sr) [2C]

Sample Id 32510082 SB17436-				t Project # 32510		Matrix Concrete		ction Date Aug-10 15			ceived Aug-10	
CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Polychloria	le Organic Compounds by GC nated Biphenyls by SW846 8082 by method SW846 3540C									2		v
12674-11-2	Aroclor-1016	BRL		µg/kg dry	60.9	1	SW846 8082	30-Aug-10	31-Aug-10	IMR "	1018549	
11104-28-2	Aroclor-1221	BRL		µg/kg dry	60.9	1		-				X
11141-16-5	Aroclor-1232	BRL		µg/kg dry	60.9	1						X
53469-21-9	Aroclor-1242	BRL		µg/kg dry	60.9	1				*		X
12672-29-6	Aroclor-1248	BRL		µg/kg dry	60.9	1	*		*		М	X
11097-69-1	Aroclor-1254	753,000	E	µg/kg dry	60.9	1	•	*	*	•	*	X
11096-82-5	Aroclor-1260	BRL		µg/kg dry	60.9	1	3M		*	"	"	X
37324-23-5	Aroclor-1262	BRL		μg/kg dry	60.9	1		94	*			X
11100-14-4	Aroclor-1268	BRL		µg/kg dry	60.9	1				"		X
Surrogate r	recoveries:											
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr)	72			30-150 %				25			
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr) [2C]	95			30-150 %		•	*	*		**	
2051-24-3	Decachlorobiphenyl (Sr)	83			30-150 %							
2051-24-3	Decachlorobiphenyl (Sr) [2C]	65			30-150 %		*		- 27			
	is of Polychlorinated Biphenyls by by method SW846 3540C	SW846 8082	GS1									
12674-11-2	Aroclor-1016	BRL		µg/kg dry	12200	200	SW846 8082	30-Aug-10	01-Sep-10	IMR	1018549) X
11104-28-2	Aroclor-1221	BRL		µg/kg dry	12200	200			**	-	*	X
11141-16-5	Aroclor-1232	BRL		µg/kg dry	12200	200	**	104	8.00		-	X
53469-21-9	Aroclor-1242	BRL		μg/kg dry	12200	200	w		5000	н		X
12672-29-6	Aroclor-1248	BRL		μg/kg dry	12200	200	-					X
11097-69-1	Aroclor-1254	1,520,000		μg/kg dry	12200	200				**	-	X
11096-82-5	Aroclor-1260	BRL		μg/kg dry	12200	200			963	*		X
37324-23-5	Aroclor-1262	BRL		µg/kg dry	12200	200		**	*	**	*	X
11100-14-4	Aroclor-1268	BRL		µg/kg dry	12200	200				**		X
Surrogate	recoveries:											
	4,4-DB-Octafluorobiphenyl (Sr)	0	S01		30-150 %				(80)		*	
	4,4-DB-Octafluorobiphenyl (Sr) [2C]	0	S01		30-150 %			*				
2051-24-3	Decachlorobiphenyl (Sr)	0	S01		30-150 %				190		**	
2051-24-3	Decachlorobiphenyl (Sr) [2C]	0	S01		30-150 %		*	*	90		*	
General C	hemistry Parameters											
	% Solids	98.4		%		1	SM2540 G Mod.	31-Aug-10	31-Aug-10	BD	1018588	ı

Sample Ide 325100827 SB17436-1	12			Project # 2510		<u>Matrix</u> Concrete		tion Date/ Aug-10 15		0.5	eived Aug-10	
(*************************************	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
	e Organic Compounds by GC											
	ated Biphenyls by SW846 8082											
Prepared b	y method SW846 3540C				17572712		SW846 8082	30-Aug-10	31-Aug-10	IMR	1018549	×
	Aroclor-1016	BRL		µg/kg dry	69.9	1	500646 6002	"	n n			X
11104-28-2	Aroclor-1221	BRL		µg/kg dry	69.9	1						X
11141-16-5	Aroclor-1232	BRL		µg/kg dry	69.9	1			**			x
53469-21-9	Aroclor-1242	BRL		µg/kg dry	69.9	1			ii.			×
12672-29-6	Aroclor-1248	BRL		μg/kg dry	69.9	1	*					×
11097-69-1	Aroclor-1254	104,000	E	μg/kg dry	69.9	1	*	•			140	X
11096-82-5	Aroclor-1260	BRL		µg/kg dry	69.9	1						
	Aroclor-1262	BRL		µg/kg dry	69.9	1			•			X
37324-23-5		BRL		µg/kg dry	69.9	1	194			*	•	X
11100-14-4	Aroclor-1268						112.79					
Surrogate re	ecoveries:	200.10			30-150 %				394	*		
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr)	62								*	**	
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr) [2C]	62			30-150 %				(44)	15.85		
2051-24-3	Decachlorobiphenyl (Sr)	70			30-150 %		0000 01 0 0		190		0.00	
2051-24-3	Decachlorobiphenyl (Sr) [2C]	72			30-150 %							
Re-analys	is of Polychlorinated Biphenyls by by method SW846 3540C	SW846 8082	GS1							- 222		. v
	Aroclor-1016	BRL		μg/kg dry	3500	50	SW846 8082	30-Aug-10	0 01-Sep-10	MR	101854	
		BRL		μg/kg dry	3500	50		W.	3.00		*	X
11104-28-2	Aroclor-1221	BRL		μg/kg dry	3500	50		•		ж		X
11141-16-5	Aroclor-1232	BRL		μg/kg dry	3500	50	**		•		**	Х
53469-21-9	Aroclor-1242	BRL		μg/kg dry	3500	50	¥	HC			*	×
12672-29-6	Aroclor-1248			µg/kg dry	3500	50			*		(6.5)	X
11097-69-1	Aroclor-1254	129,000		µg/kg dry	3500	50						X
11096-82-5	Aroclor-1260	BRL			3500	50	Si .	*	9			X
37324-23-5	Aroclor-1262	BRL		µg/kg dry		50				12		X
11100-14-4	Aroclor-1268	BRL		µg/kg dry	3500							
Surrogate	recoveries:										**	
	4.4-DB-Octafluorobiphenyl (Sr)	150			30-150 %	5	a. *.	107			**	
	4,4-DB-Octafluorobiphenyl (Sr)	75			30-150 %	5	•	27007	70			
2051.24.2	[2C] Decachlorobiphenyl (Sr)	50			30-150 %	6				2900		
2051-24-3	Decachlorobiphenyl (Sr) [2C]	100			30-150 %	6	3 4 2			•		
2051-24-3												
General C	Chemistry Parameters % Solids	92.2		%		1	SM2540 G Mod	. 31-Aug-1	10 31-Aug-1	0 BD	10185	88

Sample Identification	n
32510082713	
SB17436-13	

Client Project # 32510

Matrix Concrete Collection Date/Time 27-Aug-10 15:25 Received 30-Aug-10

SB17436	-13			32510		Concrete	: 21	-Aug-10 13	5:25	30	Aug-10	
CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Semivolat	ile Organic Compounds by GC											
	inated Biphenyls by SW846 8082 by method SW846 3540C	!										
Strawn leave	Aroclor-1016	BRL		µg/kg dry	66.4	1	SW846 8082	30-Aug-10	31-Aug-10	IMR	1018549	Х
11104-28-2		BRL		μg/kg dry	66.4	1		*	×	194		X
11141-16-5	Aroclor-1232	BRL		μg/kg dry	66.4	1						X
53469-21-9	Aroclor-1242	BRL		µg/kg dry	66.4	1		*	*		1.81	X
12672-29-6	Aroclor-1248	BRL		µg/kg dry	66.4	1				14		X
11097-69-1	Aroclor-1254	36,300	E	μg/kg dry	66.4	1				9		X
11096-82-5	Aroclor-1260	BRL		µg/kg dry	66.4	1	*	**	×	38	*	X
37324-23-5	Aroclor-1262	BRL		μg/kg dry	66.4	1		•	•		*	X
11100-14-4	Aroclor-1268	BRL		µg/kg dry	66.4	1					*	X
Surrogate i	recoveries:									-		
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr)	58			30-150 %		**	*			*	
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr) [2C]	63			30-150 %		•	*	•		•	
2051-24-3	Decachlorobiphenyl (Sr)	90			30-150 %		*	*			*	
2051-24-3	Decachlorobiphenyl (Sr) [2C]	74			30-150 %			**	*			
	sis of Polychlorinated Biphenyls b by method SW846 3540C	y SW846 8082	GS1									
12674-11-2	Aroclor-1016	BRL		μg/kg dry	664	10	SW846 8082	30-Aug-10	01-Sep-10	IMR	1018549	X
11104-28-2	Aroclor-1221	BRL		μg/kg dry	664	10		*		3.00	•	X
11141-16-5	Aroclor-1232	BRL		µg/kg dry	664	10	*	*	*		*	X
53469-21-9	Aroclor-1242	BRL		µg/kg dry	664	10			•	"	•	X
12672-29-6	Aroclor-1248	BRL		µg/kg dry	664	10	*			*	•	X
11097-69-1	Aroclor-1254	42,100		µg/kg dry	664	10		*	*	*	*	X
11096-82-5	Aroclor-1260	BRL		μg/kg dry	664	10	"	*		*	**	X
37324-23-5	Aroclor-1262	BRL		µg/kg dry	664	10	#			*	*	X
11100-14-4	Aroclor-1268	BRL		μg/kg dry	664	10	"	*	**	30	#3	X
Surrogate i	recoveries:											
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr)	75			30-150 %		*	•		"	*	
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr) [2C]	65			30-150 %			*	5	377	*	
2051-24-3	Decachlorobiphenyl (Sr)	50			30-150 %				*	54		
2051-24-3	Decachlorobiphenyl (Sr) [2C]	70			30-150 %							
General C	hemistry Parameters											
	% Solids	98.2		%		1	SM2540 G Mod.	31-Aug-10	31-Aug-10	BD	1018588	

SB17436-14 CAS No. Analyte(s) Result Flag Units *RDL Dilution Method Ref. Prepared Analyz Semivolatile Organic Compounds by GC Polychlorinated Biphenyls by SW846 8082		1018550	Cert.
Semivolatile Organic Compounds by GC Polychlorinated Biphenyls by SW846 8082		*	
Polychlorinated Biphenyls by SW846 8082		*	
Polydilonnated biphenys by Control		*	
Prepared by method SW846 3540C		*	
12674-11-2 Arcclor-1016 BRL µg/kg 98.6 1 Syv44-6002 357-0g-10-22			
11104-28-2 Arcclor-1221 BRL µg/kg 98.6 1 "	**	**	X
11141-16-5 Arcclor-1232 BRL µg/kg 98.6 1 "			X
53469-21-9 Aroclor-1242 BRL µg/kg 98.6 1 "	¥		×
12672-29-6 Aroclor-1248 BRL µg/kg 98.6 1 " "	-		
11007.69.1 Arcclor.1254 69.200 E µg/kg 98.6 1 "			X
11005 82.5 Arcdor 1260 BRL µg/kg 98.6 1 "			X
PRI			X
11100-14-4 Aroclor-1268 BRL µg/kg 98.6 1 " " "	•		X
-			
Surrogate recoveries: " " " " " " " " " " " " " " " " " " "			
10386-84-2 4,4-DB-Octafluorobipnenyl (Sr) 30-150 % " " "		:#	
10386-84-2 4,4-DB-Octafluorobiphenyl (Sr) 54 [2C] " " " " " " " " " " " " " " " " " " "	н.		
2051-24-3 Decachlorobiphenyl (Sr)	***	300	
2051-24-3 Decachlorobiphenyl (Sr) [2C] 80 30-150 %			
Re-analysis of Polychlorinated Biphenyls by SW846 8082 GS1			
Prepared by method SW846 3540C	p-10 SM	10185	50 X
12674-11-2 Aroclor-1016 BRL Paris			X
11104-28-2 Aroclor-1221 BRL P97/19			X
11141-16-5 Aroclor-1232 BRL µg/kg 1970 20	W		X
53469-21-9 Aroclor-1242 BRL μg/kg 1970 20			×
12672-29-6 Aroclor-1248 BRL µg/kg 1970 20			X
11097-69-1 Aroclor-1254 80,600 µg/kg 1970 20		-	×
11096-82-5 Aroclor-1260 BRL µg/kg 1970 20			×
37324-23-5 Aroclor-1262 BRL µg/kg 1970 20		¥.	X
11100-14-4 Aroclor-1268 BRL µg/kg 1970 20 " " "			
Curronala recoveries:	545		
Surrogate recoveries: 10386-84-2 4,4-DB-Octafluorobiphenyl (Sr) 130 30-150 %			
10386-84-2 4,4-DB-Octafluorobiphenyl (Sr) 100 30-150 %			
[2C] 30-150 % " " "	. "		
2051-24-3 Decachlorobiphenyl (Sr) 90 2051-24-3 Decachlorobiphenyl (Sr) [2C] 100 30-150 % " " "			

Sample Identification 32510082715 SB17436-15				<u>Project #</u> 2510		<u>Matrix</u> Brick		ction Date/ Aug-10 16			ceived Aug-10	
CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
	le Organic Compounds by GC nated Biphenyls by SW846 8082											
Prepared	by method SW846 3540C						014040 0000	30 Aug-10	02-Sep-10	SM	1018550	×
	Aroclor-1016	BRL		μg/kg	98.8	1	SW846 8082	30-Aug-10	"			X
11104-28-2	Aroclor-1221	BRL		µg/kg	98.8	1						X
11141-16-5	Aroclor-1232	BRL		μg/kg	98.8	1						X
53469-21-9	Aroclor-1242	BRL		µg/kg	98.8	1						×
12672-29-6		BRL		µg/kg	98.8	1						X
11097-69-1	Aroclor-1254	30,900	E	µg/kg	98.8	1			30			×
11096-82-5		BRL		µg/kg	98.8	1						×
37324-23-5		BRL		µg/kg	98.8	1	•	157				X
	Aroclor-1268	BRL		µg/kg	98.8	1			15.0			
-												
	recoveries:	84			30-150 %		9.50	**	м	***		
10386-84-2		86			30-150 %		*	375		*		
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr) [2C]	00					20			4		
2051-24-3	Decachlorobiphenyl (Sr)	66			30-150 %					**		
2051-24-3	Decachlorobiphenyl (Sr) [2C]	86			30-150 %		•					
	sis of Polychlorinated Biphenyls b	y SW846 8082	GS1									
Prepared	by method SW846 3540C				1001002		SW846 8082	30-Aug-1	0 02-Sep-1	o SM	10185	50 X
12674-11-2		BRL		µg/kg	988	10	300040 0002	30-7 tag 1	"			X
11104-28-2	Aroclor-1221	BRL		µg/kg	988	10	7,		· ·			×
11141-16-5	5 Aroclor-1232	BRL		µg/kg	988	10				ж.	*	X
53469-21-9	Aroclor-1242	BRL		μg/kg	988	10		**				×
12672-29-6	Aroclor-1248	BRL		µg/kg	988	10						×
11097-69-1	1 Aroclor-1254	33,300		µg/kg	988	10					*	×
11096-82-5		BRL		µg/kg	988	10		***			W	×
37324-23-5		BRL		µg/kg	988	10	5. 4 5			и		×
11100-14-		BRL		µg/kg	988	10	•			-		
Control of the Contro												
	e recoveries:	110			30-150 %	6	(**)		-	*		
	2 4,4-DB-Octafluorobiphenyl (Sr)	90			30-150 %		*	(1) ((1)				
10386-84-	2 4,4-DB-Octafluorobiphenyl (Sr) [2C]	30					20	14				
2051-24-3		80			30-150 9	6	•	20				
2051-24-3		95			30-150 %	6	*	7.3				
2001-24-3	Decembrookness, (a.) (-2)											

32510082 SB17436			No. of the last of	Project # 2510	<u>ŧ</u>	<u>Matrix</u> Brick		ection Date 7-Aug-10 16			<u>cceived</u> Aug-10	
CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert
Semivolat	ile Organic Compounds by GC											
Polychlor	inated Biphenyls by SW846 8082											
Prepared	by method SW846 3540C											
12674-11-2	Aroclor-1016	BRL		µg/kg	97.0	1	SW846 8082	30-Aug-10	02-Sep-10	SM	1018550	×
11104-28-2	Aroclor-1221	BRL		µg/kg	97.0	1	F		**		*	X
11141-16-5	Aroclor-1232	BRL		µg/kg	97.0	1			•	•	-	X
53469-21-9	Aroclor-1242	BRL		µg/kg	97.0	1		- 2		•		X
12672-29-6	Aroclor-1248	BRL		µg/kg	97.0	1		*			36	X
11097-69-1	Aroclor-1254	28,200	E	µg/kg	97.0	1		-		*		Х
11096-82-5	Aroclor-1260	BRL		μg/kg	97.0	1						X
37324-23-5	Aroclor-1262	BRL		µg/kg	97.0	1					*	X
11100-14-4	Aroclor-1268	BRL		µg/kg	97.0	1	•	•	•		н	X
Surrogate i	recoveries:											
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr)	84			30-150 %			(/M)				
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr) [2C]	86			30-150 %			-	*		*	
2051-24-3	Decachlorobiphenyl (Sr)	72			30-150 %			*	•			
2051-24-3	Decachlorobiphenyl (Sr) [2C]	82			30-150 %		. 46	7.00				
	sis of Polychlorinated Biphenyls b by method SW846 3540C	y SW846 808	<u>2</u> GS1									
12674-11-2	Aroclor-1016	BRL		µg/kg	970	10	SW846 8082	30-Aug-10	02-Sep-10	SM	1018550	Х
11104-28-2	Aroclor-1221	BRL		µg/kg	970	10				•		X
11141-16-5	Aroclor-1232	BRL		µg/kg	970	10	2346		586	(8)		Х
3469-21-9	Aroclor-1242	BRL		µg/kg	970	10	н		(W.)		**	X
12672-29-6	Aroclor-1248	BRL		µg/kg	970	10						Х
1097-69-1	Aroclor-1254	29,900		μg/kg	970	10	(000)	390	*	*	*	Х
1096-82-5	Aroclor-1260	BRL		µg/kg	970	10		W.			*	Х
37324-23-5	Aroclor-1262	BRL		μg/kg	970	10	*		*			X
1100-14-4	Aroclor-1268	BRL		µg/kg	970	10						X
Surrogate r	recoveries:											
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr)	125			30-150 %			**			**	
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr)	90			30-150 %			•	•			

30-150 % 30-150 %

2051-24-3

Decachlorobiphenyl (Sr)

2051-24-3 Decachlorobiphenyl (Sr) [2C]

95

85

Sample Ide 25100828 SB17436-1			11	Project # 2510		<u>Matrix</u> Asphalt		ction Date/ Aug-10 10		-	eived .ug-10	
	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
	e Organic Compounds by GC											
	ated Biphenyls by SW846 8082											
repared b	by method SW846 3540C							20 Aug 10	02-Sep-10	SM	1018550	X
	Aroclor-1016	BRL		µg/kg	260	1	SW846 8082	30-Aug-10	# #			X
1104-28-2	Aroclor-1221	BRL		µg/kg	260	1						X
1141-16-5	Aroclor-1232	BRL		µg/kg	260	1						X
3469-21-9	Aroclor-1242	BRL		µg/kg	260	1			*	*		X
2672-29-6	Aroclor-1248	BRL		µg/kg	260	1	*	72 **				X
1097-69-1	Aroclor-1254	11,700		µg/kg	260	1	*					X
11096-82-5	Aroclor-1260	BRL		µg/kg	260	1	4		w.			X
	Aroclor-1262	BRL		µg/kg	260	1		•				X
11100-14-4		BRL		µg/kg	260	1	*					^
Surrogate r	ecoveries:								10			
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr)	78			30-150 %		•					
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr)	90			30-150 %		(80)					
	[2C]				30-150 %			(M)				
2051-24-3	Decachlorobiphenyl (Sr)	69							0.000			
2051-24-3	Decachlorobiphenyl (Sr) [2C]	80			30-150 %							
Sample Id	<u>lentification</u>		Clien	t Project#		Matrix		lection Dat			eceived	
32510082	818			32510		Asphalt	28	8-Aug-10 1	10:28	30-	-Aug-10	
SB17436	-18								d Analyzea	Landus	t Ratch	Cer
CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepare	d Analyzea	Anatysi	Dinen	
Semiyolat	ile Organic Compounds by GC											
	•											
Polychlor	inated Biphenyls by SW846 8082	V.										
Polychlor Prepared	inated Biphenyls by SW846 8082 by method SW846 3540C	1					SIA/R46 8082	30-Aug-1	10 02-Sep-1	o SM	101855	60 X
Prepared	inated Biphenyls by SW846 8082 by method SW846 3540C Aroclor-1016	BRL		µg/kg	338	1	SW846 8082	30-Aug-1	0 02-Sep-1	0 SM	101855	
Prepared 12674-11-2	by method SW846 3540C Aroclor-1016			hã/kã	338	1		30-Aug-1 "			101855	>
Prepared 12674-11-2 11104-28-2	by method SW846 3540C Aroclor-1016	BRL		µg/kg µg/kg				30-Aug-1 " "				>
Prepared 12674-11-2 11104-28-2 11141-16-5	Aroclor-1221 Aroclor-1232	BRL BRL		μg/kg	338	1 1 1	*	30-Aug-1	**			>
Prepared 12674-11-2 11104-28-2 11141-16-5 53469-21-9	by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1232 Aroclor-1242	BRL BRL		µg/kg µg/kg	338 338	1	*	30-Aug-1	**			>
Prepared 12674-11-2 11104-28-2 11141-16-5 53469-21-9 12672-29-6	hy method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1232 Aroclor-1242 Aroclor-1248	BRL BRL BRL BRL		µg/kg µg/kg µg/kg	338 338 338	1 1 1	*		**			>
Prepared 12674-11-2 11104-28-2 11141-16-5 53469-21-9 12672-29-6 11097-69-1	hy method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1232 Aroclor-1242 Aroclor-1248 Aroclor-1254	BRL BRL BRL BRL		pg/kg pg/kg pg/kg	338 338 338 338	1 1 1	*	30-Aug-1			*	>
Prepared 12674-11-2 11104-28-2 11141-16-5 53469-21-9 12672-29-6 11097-69-1 11096-82-5	Aroclor-1232 Aroclor-1242 Aroclor-1254 Aroclor-1254 Aroclor-1260	BRL BRL BRL BRL BRL 3,710		ha/ka ha/ka ha/ka ha/ka	338 338 338 338 338	1 1 1 1	*		# # # # # # # # # # # # # # # # # # #			>
Prepared 12674-11-2 11104-28-2 11141-16-5 53469-21-9 12672-29-6 11097-69-1 11096-82-5 37324-23-5	Aroclor-1232 Aroclor-1242 Aroclor-1254 Aroclor-1254 Aroclor-1260	BRL BRL BRL BRL 3,710		ha/ka ha/ka ha/ka ha/ka ha/ka	338 338 338 338 338 338	1 1 1 1 1	*				* * * * * * * * * * * * * * * * * * * *	>
Prepared 12674-11-2 11104-28-2 11141-16-5 53469-21-9 12672-29-6 11097-69-1 11096-82-5 37324-23-5 11100-14-4	by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1232 Aroclor-1242 Aroclor-1248 Aroclor-1254 6 Aroclor-1260 6 Aroclor-1262 Aroclor-1268	BRL BRL BRL BRL 3,710 459 BRL		ha/ka ha/ka ha/ka ha/ka	338 338 338 338 338 338 338	1 1 1 1 1	*		# # # # # # # # # # # # # # # # # # #		* * * * * * * * * * * * * * * * * * * *	>
Prepared 12674-11-2 11104-28-2 11141-16-5 53469-21-9 12672-29-6 11097-69-1 11096-82-5 37324-23-5 11100-14-4 Surrogate	hy method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1232 Aroclor-1242 Aroclor-1248 Aroclor-1254 Aroclor-1260 Aroclor-1262 Aroclor-1268 Precoveries:	BRL BRL BRL BRL 3,710 459 BRL		ha/ka ha/ka ha/ka ha/ka	338 338 338 338 338 338 338	1 1 1 1 1 1 1 1 1	*		# # # # # # # # # # # # # # # # # # #			>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>
Prepared 12674-11-2 11104-28-2 11141-16-5 53469-21-9 12672-29-6 11097-69-1 11096-82-5 37324-23-5 11100-14-4 Surrogate 10386-84-2	Aroclor-1016 Aroclor-1221 Aroclor-1232 Aroclor-1242 Aroclor-1254 Aroclor-1260 Aroclor-1262 Aroclor-1268 Aroclor-1268 Aroclor-1268 Aroclor-1268 Aroclor-1268 Aroclor-1268	BRL BRL BRL BRL 3,710 459 BRL BRL		ha/ka ha/ka ha/ka ha/ka	338 338 338 338 338 338 338 338	1 1 1 1 1 1 1 1	*		# # # # # # # # # # # # # # # # # # #			>
Prepared 12674-11-2 11104-28-2 11141-16-5 53469-21-9 12672-29-6 11097-69-1 11096-82-5 37324-23-5 11100-14-4 Surrogate 10386-84-2	Aroclor-1016 Aroclor-1221 Aroclor-1232 Aroclor-1242 Aroclor-1254 Aroclor-1254 Aroclor-1260 Aroclor-1262 Aroclor-1268 Precoveries: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	BRL BRL BRL BRL 3,710 459 BRL BRL		ha/ka ha/ka ha/ka ha/ka	338 338 338 338 338 338 338 338	1 1 1 1 1 1 1 1	*		# # # # # # # # # # # # # # # # # # #			>
Prepared 12674-11-2 11104-28-2 11141-16-5 53469-21-9 12672-29-6 11097-69-1 11096-82-5 37324-23-5 11100-14-4 Surrogate 10386-84-2	Aroclor-1016 Aroclor-1221 Aroclor-1232 Aroclor-1242 Aroclor-1248 Aroclor-1254 Aroclor-1260 Aroclor-1262 Aroclor-1268 arecoveries: 2 4,4-DB-Octafluorobiphenyl (Sr) [2C] Decachlorobiphenyl (Sr)	BRL BRL BRL BRL 3,710 459 BRL BRL		ha/ka ha/ka ha/ka ha/ka	338 338 338 338 338 338 338 338 30-150 %	1 1 1 1 1 1 1 1 1	*		# # # # # # # # # # # # # # # # # # #			2

32510082 SB17436-			V	t Project # 32510		Matrix Soil		ction Date. Aug-10 10		1997 Y	ceived Aug-10	
CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Semivolati	ile Organic Compounds by GC											
	inated Biphenyls by SW846 8082											
	by method SW846 3540C	201		ualka dar	21.1	1	SW846 8082	30-Aug-10	31-Aug-10	IMR	1018549	Х
	Aroclor-1016	BRL BRL		µg/kg dry µg/kg dry	21.1	1	"	"				Х
11104-28-2 11141-16-5		BRL		µg/kg dry	21.1	1						X
53469-21-9	Aroclor-1242	BRL		µg/kg dry	21.1	1	:M.S				+	X
12672-29-6	Aroclor-1242 Aroclor-1248	BRL		µg/kg dry	21.1	1	(W)					Х
11097-69-1	Aroclor-1254	405		μg/kg dry	21.1	1	•		*	н	**	X
11096-82-5		158		μg/kg dry	21.1	1				**		X
37324-23-5	Aroclor-1262	BRL		µg/kg dry	21.1	1	2 M 2	(#)	*		-	X
11100-14-4		BRL		μg/kg dry	21.1	1	*				*	X
Surrogate	recoveries:											
10386-84-2		83			30-150 %			3.00	**		•	
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr)	89			30-150 %		2.4.2					
2051-24-3	[2C] Decachlorobiphenyl (Sr)	90			30-150 %						*	
2051-24-3	Decachlorobiphenyl (Sr) [2C]	92			30-150 %	(£		3.8				
	Themistry Parameters	1800										
General C	% Solids	93.7		%		1	SM2540 G Mod.	31-Aug-10	31-Aug-10	BD	1018588	
32510082	dentification		-	t Project#		Matrix	X2-1-1-1-1	ection Date			ceived	
SB17436				32510		Soil	28	-Aug-10 10	0:51	30-	Aug-10	
				F1. 24-	*nni	Dilution	Method Ref.	Pranarad	Analyzed	Analyst	Ratch	Cert
CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Ditution	тетой кеј.	Гтеритеи	Antityceu	Analysi	Duten	-
Semivolat	ile Organic Compounds by GC											
	inated Biphenyls by SW846 8082											
	by method SW846 3540C	BRL		μg/kg dry	21.0	1	SW846 8082	30-Aug-10	31-Aug-10	IMR	1018549	X
	Aroclor-1016	BRL		µg/kg dry	21.0	1	м			W		X
11104-28-2 11141-16-5		BRL		µg/kg dry	21.0	1	(Х
11141-10-5	A100101-1232	DIVE		P331	0.000					W.		
52460.21.Q	Arnolog 1242	BRI		ua/ka dry	21.0	1			**	10.0	*	X
53469-21-9		BRL BRI		µg/kg dry µa/ka dry	21.0 21.0	1						X
12672-29-6	Aroclor-1248	BRL		µg/kg dry	21.0		*					
12672-29-6 11097-69-1	Aroclor-1248 Aroclor-1254	BRL 137		µg/kg dry µg/kg dry		1	*	•		n		Х
12672-29-6 11097-69-1 11096-82-5	Aroclor-1248 Aroclor-1254 Aroclor-1260	BRL 137 BRL		µg/kg dry µg/kg dry µg/kg dry	21.0 21.0 21.0	1	*	•				X X
12672-29-6 11097-69-1 11096-82-5 37324-23-5	Aroclor-1248 Aroclor-1254 Aroclor-1260 Aroclor-1262	BRL 137		µg/kg dry µg/kg dry	21.0 21.0	1 1 1		•				x x x
12672-29-6 11097-69-1 11096-82-5 37324-23-5 11100-14-4	Aroclor-1248 Aroclor-1254 Aroclor-1260 Aroclor-1262 Aroclor-1268	BRL 137 BRL BRL		hg/kg dry hg/kg dry hg/kg dry	21.0 21.0 21.0 21.0	1 1 1 1	*	•		**		x x x
12672-29-6 11097-69-1 11096-82-5 37324-23-5 11100-14-4 Surrogate	Aroclor-1248 Aroclor-1254 Aroclor-1260 Aroclor-1262 Aroclor-1268 recoveries:	BRL 137 BRL BRL BRL		hg/kg dry hg/kg dry hg/kg dry	21.0 21.0 21.0 21.0	1 1 1 1	*	•		**		x x x
12672-29-6 11097-69-1 11096-82-5 37324-23-5 11100-14-4 Surrogate	Aroclor-1248 Aroclor-1254 Aroclor-1260 Aroclor-1262 Aroclor-1268 recoveries: 4,4-DB-Octafluorobiphenyl (Sr) 4,4-DB-Octafluorobiphenyl (Sr)	BRL 137 BRL BRL		hg/kg dry hg/kg dry hg/kg dry	21.0 21.0 21.0 21.0 21.0	1 1 1 1	(* (* (*	•		**		x x x
12672-29-6 11097-69-1 11096-82-5 37324-23-5 11100-14-4 Surrogate 10386-84-2 10386-84-2	Aroclor-1248 Aroclor-1254 Aroclor-1260 Aroclor-1262 Aroclor-1268 recoveries: 4,4-DB-Octafluorobiphenyl (Sr) 4,4-DB-Octafluorobiphenyl (Sr) [2C]	BRL 137 BRL BRL BRL		hg/kg dry hg/kg dry hg/kg dry	21.0 21.0 21.0 21.0 21.0 21.0	1 1 1 1	1 m 1 m 1 m 2 m	•		**		x x x
12672-29-6 11097-69-1 11096-82-5 37324-23-5 11100-14-4 Surrogate 10386-84-2 10386-84-2	Aroclor-1248 Aroclor-1254 Aroclor-1260 Aroclor-1262 Aroclor-1268 recoveries: 4,4-DB-Octafluorobiphenyl (Sr) 4,4-DB-Octafluorobiphenyl (Sr) [2C] Decachlorobiphenyl (Sr)	BRL 137 BRL BRL BRL		hg/kg dry hg/kg dry hg/kg dry	21.0 21.0 21.0 21.0 21.0 21.0 30-150 %	1 1 1 1						x x x
12672-29-6 11097-69-1 11096-82-5 37324-23-5 11100-14-4 Surrogate 10386-84-2 10386-84-2 2051-24-3 2051-24-3	Aroclor-1248 Aroclor-1254 Aroclor-1260 Aroclor-1262 Aroclor-1268 recoveries: 4,4-DB-Octafluorobiphenyl (Sr) 4,4-DB-Octafluorobiphenyl (Sr) [2C]	BRL 137 BRL BRL BRL		hg/kg dry hg/kg dry hg/kg dry	21.0 21.0 21.0 21.0 21.0 21.0 30-150 %	1 1 1 1			•			x x x

Sample Identification 32510082821 SB17436-21		Client Project # 32510			<u>Matrix</u> Asphalt	Collection Date/Time 28-Aug-10 11:01			Received 30-Aug-10			
CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Semivolati	ile Organic Compounds by GC											
	nated Biphenyls by SW846 8082 by method SW846 3540C											
12674-11-2	Aroclor-1016	BRL		µg/kg	302	1	SW846 8082	30-Aug-10	02-Sep-10	SM	1018550	X
11104-28-2	Aroclor-1221	BRL		µg/kg	302	1			125	*	•	X
11141-16-5	Aroclor-1232	BRL		µg/kg	302	1	*		(H	н	**	X
53469-21-9	Aroclor-1242	BRL		µg/kg	302	1	•				*	X
12672-29-6	Aroclor-1248	BRL		µg/kg	302	1						X
11097-69-1	Aroclor-1254	2,360		µg/kg	302	1		*		*		X
11096-82-5	Aroclor-1260	BRL		μg/kg	302	1	•	•	**		*	X
37324-23-5	Aroclor-1262	BRL		µg/kg	302	1	190			•	*	X
11100-14-4	Aroclor-1268	BRL		µg/kg	302	1		**	(M.)			Х
Surrogate r	recoveries:											
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr)	80			30-150 %							
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr) [2C]	83			30-150 %						•	
2051-24-3	Decachlorobiphenyl (Sr)	67			30-150 %			н			100	
2051-24-3	Decachlorobiphenyl (Sr) [2C]	73			30-150 %				•		•	

Sample Ide 325100828 SB17436-2				2510		Matrix Concrete		tion Date/ Aug-10 11			ceived Aug-10	
CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Semivolatil	e Organic Compounds by GC											
	nated Biphenyls by SW846 8082											
Prepared b	by method SW846 3540C							20 10 10	31-Aug-10	IMR	1018549	X
South San Survey on	Aroclor-1016	BRL		µg/kg dry	61.0	1	SW846 8082	30-Aug-10	31-Aug-10			X
11104-28-2	Aroclor-1221	BRL		µg/kg dry	61.0	1						×
11141-16-5	Aroclor-1232	BRL		µg/kg dry	61.0	1					-	X
53469-21-9	Aroclor-1242	BRL		µg/kg dry	61.0	1						X
12672-29-6	Aroclor-1248	BRL		μg/kg dry	61.0	1						X
11097-69-1	Aroclor-1254	14,700	E	µg/kg dry	61.0	1						X
11096-82-5	Aroclor-1260	BRL		µg/kg dry	61.0	1		3 11 2				
37324-23-5	Aroclor-1262	BRL		µg/kg dry	61.0	1	•		**		100 100	X
11100-14-4	Aroclor-1268	BRL		µg/kg dry	61.0	1	. M.	•		*		X
Surrogate r									_			
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr)	56			30-150 %		•	•		*		
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr)	59			30-150 %			-	*			
2051-24-3	[2C] Decachlorobiphenyl (Sr)	67			30-150 %			ж.				
	Decachlorobiphenyl (Sr) [2C]	72			30-150 %				*	127	10.5	
2051-24-3			GS1									
Re-analys	sis of Polychlorinated Biphenyls by method SW846 3540C	V 000040 0002									404054	o v
12674-11-2		BRL		μg/kg dry	305	5	SW846 8082	30-Aug-1	0 01-Sep-1	0 IMR	101854	
11104-28-2	Aroclor-1221	BRL		μg/kg dry	305	5	: W					X
11141-16-5		BRL		μg/kg dry	305	5			*			X
		BRL		μg/kg dry	305	5		*	*	(Х
53469-21-9	Aroclor-1242	BRL		μg/kg dry	305	5			•	"	*	Х
12672-29-6		15,700		μg/kg dry	305	5	**	(80)	*			×
11097-69-1	Aroclor-1254	BRL		μg/kg dry	305	5				**	**	X
11096-82-5	JA HARRONS	A1000000		μg/kg dry	305	5	3,000			w	344	X
37324-23-5	Aroclor-1262	BRL		12/12/17/17/2011 NO	272229	5				*		X
11100-14-4	Aroclor-1268	BRL		µg/kg dry								
Surrogate	recoveries:				30-150 %						(96)	
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr)	75								н		
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr) [2C]	63			30-150 %			W)				
2051-24-3	Decachlorobiphenyl (Sr)	60			30-150 %				¥	э		
2051-24-3	Decachlorobiphenyl (Sr) [2C]	75			30-150 %	6	20					
General	Chemistry Parameters			%		1	SM2540 G Mod	31-Aug-	10 31-Aug-	10 BD	10185	88

<u>Sample Identification</u> 32510082823 SB17436-23			32510 C		Matrix Concrete	Colle 28	Received 30-Aug-10					
CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Polychloria	le Organic Compounds by GC nated Biphenyls by SW846 8082 by method SW846 3540C						276000		0.4 - 40	IMR	1018549	×
12674-11-2	Aroclor-1016	BRL		µg/kg dry	59.9	1	SW846 8082		31-Aug-10	"	1010349	×
11104-28-2	Aroclor-1221	BRL		µg/kg dry	59.9	1	39			- 2		×
11141-16-5	Aroclor-1232	BRL		μg/kg dry	59.9	1		*	*			
53469-21-9	Aroclor-1242	BRL		µg/kg dry	59.9	1		•	*	*		X
12672-29-6	Aroclor-1248	BRL		µg/kg dry	59.9	1			**	*	*	×
11097-69-1	Aroclor-1254	4,850		μg/kg dry	59.9	1			27	•		X
	Aroclor-1254 Aroclor-1260	BRL		μg/kg dry	59.9	1	-					X
11096-82-5	The sea services	BRL		μg/kg dry	59.9	1					*	X
37324-23-5	Aroclor-1262	BRL		μg/kg dry	59.9	1					•	X
11100-14-4	Aroclor-1268	BRL		pg/ng ur)		<u></u>						
Surrogate i	recoveries:				00 45001					W	14	
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr)	66			30-150 %					-		
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr)	68			30-150 %							

30-150 %

30-150 %

%

SM2540 G Mod. 31-Aug-10 31-Aug-10 BD 1018588

[2C]

2051-24-3 Decachlorobiphenyl (Sr)

% Solids

2051-24-3 Decachlorobiphenyl (Sr) [2C] General Chemistry Parameters 81

74

99.1

.nalyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Satch 1018549 - SW846 3540C						0.000		l	a 10	
Blank (1018549-BLK1)					Pre	epared: 30-	Aug-10 Ar	nalyzed: 31-Au	19-10	
Aroclor-1016	BRL		µg/kg wet	20.0						
Aroclor-1016 [2C]	BRL		µg/kg wet	20.0						
Aroclor-1221	BRL		µg/kg wet	20.0						
Aroclor-1221 [2C]	BRL		μg/kg wet	20.0						
Aroclor-1232	BRL		μg/kg wet	20.0						
Aroclor-1232 [2C]	BRL		μg/kg wet	20.0						
Aroclor-1242	BRL		μg/kg wet	20.0						
Aroclor-1242 [2C]	BRL		μg/kg wet	20.0						
Aroclor-1248	BRL		μg/kg wet	20.0						
Aroclor-1248 [2C]	BRL		μg/kg wet	20.0						
Aroclor-1254	BRL		µg/kg wet	20.0						
Aroclor-1254 [2C]	BRL		μg/kg wet	20.0						
Aroclor-1260	BRL		μg/kg wet	20.0						
Aroclor-1260 [2C]	BRL		μg/kg wet	20.0						
Aroclor-1262	BRL		μg/kg wet	20.0						
	BRL		μg/kg wet	20.0						
Aroclor-1262 [2C]	BRL		μg/kg wet	20.0						
Arodor-1268	BRL		μg/kg wet	20.0						
Aroclor-1268 [2C]			μg/kg wet		20.0		88	30-150		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	17.6		μg/kg wet		20.0		92	30-150		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	18.5		μg/kg wet		20.0		104	30-150		
Surrogate: Decachlorobiphenyl (Sr)	20.8		at an		20.0		92	30-150		
Surrogate: Decachlorobiphenyl (Sr) [2C]	18.5		μg/kg wet			Prenared: 3	0-Aug-10	Analyzed: 31-	Aug-10	
LCS (1018549-BS1)			T0000000000000000000000000000000000000		1930	repareu, s	87	50-140		
Aroclor-1016	217		μg/kg wet	20.0	250		83	50-140		
Aroclor-1016 [2C]	207		μg/kg wet	20.0	250		82	50-140		
Aroclor-1260	204		μg/kg wet	20.0	250		76	50-140		
Aroclor-1260 [2C]	190		μg/kg wet	20.0	250					
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	16.7		μg/kg wet		20.0		84	30-150		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	17.1		μg/kg wet		20.0		86	30-150		
Surrogate: Decachlorobiphenyl (Sr)	19.9		μg/kg wet		20.0		100	30-150		
Surrogate: Decachlorobiphenyl (Sr) [2C]	17.0		μg/kg wet		20.0		85	30-150		
LCS Dup (1018549-BSD1)					1	Prepared: 3	30-Aug-10	Analyzed: 31-		
	216		μg/kg wet	20.0	250		86	50-140	0.6	30
Aroclor-1016	206		μg/kg wet	20.0	250		82	50-140	0.8	30
Aroclor-1016 [2C]	196		μg/kg wet	20.0	250		78	50-140	4	30
Aroclor-1260	192		μg/kg wet		250		77	50-140	1	30
Aroclor-1260 [2C]			ua/ka wat		20.0)	84	30-150		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	16.7		μg/kg wet		20.0		85	30-150		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	17.0		μg/kg wet		20.0		94	30-150		
Surrogate: Decachlorobiphenyl (Sr)	18.8		μg/kg wet		20.0		86	30-150		
Surrogate: Decachlorobiphenyl (Sr) [2C]	17.3		μg/kg wet		20.0					
Batch 1018550 - SW846 3540C						-	20 4 10	Analyzed: 02	Sen-10	
Blank (1018550-BLK1)				ANGOLINA		Prepared:	30-Aug-10	MINISTER, UZ	0.0	
Aroclor-1016	BRL		µg/kg	20.0						
Aroclor-1016 [2C]	BRL		µg/kg	20.0						
Aroclor-1221	BRL		µg/kg	20.0						
Aroclor-1221 [2C]	BRL		µg/kg	20.0						
Aroclor-1232	BRL		µg/kg	20.0						
Aroclor-1232 [2C]	BRL		µg/kg	20.0						
Aroclor-1242	BRL		µg/kg	20.0						
Aroclor-1242 [2C]	BRL		μg/kg	20.0						

nalyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
atch 1018550 - SW846 3540C										
Blank (1018550-BLK1)					Pre	epared: 30-	Aug-10 Ar	nalyzed: 02-Se	ep-10	
Aroclor-1248	BRL		µg/kg	20.0						
Aroclor-1248 [2C]	BRL		μg/kg	20.0						
Aroclor-1254	BRL		µg/kg	20.0						
Aroclor-1254 [2C]	BRL		µg/kg	20.0						
Aroclor-1260	BRL		µg/kg	20.0						
Aroclor-1260 [2C]	BRL		µg/kg	20.0						
Aroclor-1262	BRL		µg/kg	20.0						
Aroclor-1262 [2C]	BRL		µg/kg	20.0						
Aroclor-1268	BRL		µg/kg	20.0						
Aroclor-1268 [2C]	BRL		µg/kg	20.0						
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	17.3		µg/kg		20.0		86	30-150		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	17.6		µg/kg		20.0		88	30-150		
Surrogate: Decachlorobiphenyl (Sr)	16.7		µg/kg		20.0		84	30-150		
Surrogate: Decachlorobiphenyl (Sr) [2C]	16.9		µg/kg		20.0		84	30-150		
LCS (1018550-BS1)					<u>P</u>	repared: 30	-Aug-10 A	nalyzed: 02-5	Sep-10	
Aroclor-1016	221		µg/kg	20.0	250		89	50-140		
Aroclor-1016 [2C]	221		µg/kg	20.0	250		88	50-140		
Aroclor-1260	181		μg/kg	20.0	250		72	50-140		
Aroclor-1260 [2C]	195		μg/kg	20.0	250		78	50-140		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	19.1		μg/kg		20.0		96	30-150		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	16.9		µg/kg		20.0		84	30-150		
Surrogate: 4,4-DB-Octahusrobiphenyi (Or)	20.0		µg/kg		20.0		100	30-150		
Surrogate: Decachlorobiphenyl (Sr) [2C]	17.0		µg/kg		20.0		85	30-150		
					E	repared: 30)-Aug-10 /	Analyzed: 02-	Sep-10	
LCS Dup (1018550-BSD1)	214		µg/kg	20.0	250		86	50-140	3	30
Aroclor-1016	209		μg/kg	20.0	250		84	50-140	5	30
Aroclor-1016 [2C]	183		μg/kg	20.0	250		73	50-140	1	30
Aroclor 1260	202		µg/kg	20.0	250		81	50-140	3	30
Aroclor-1260 [2C]	17.2		µg/kg		20.0		86	30-150		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	18.0		μg/kg		20.0		90	30-150		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	17.9		µg/kg		20.0		90	30-150		
Surrogate: Decachlorobiphenyl (Sr)	18.4		µg/kg		20.0		92	30-150		
Surrogate: Decachlorobiphenyl (Sr) [2C]				B17436-01	E	Prepared: 3	0-Aug-10	Analyzed: 02-	Sep-10	
<u>Duplicate (1018550-DUP1)</u>	BRL		µg/kg	99.4		BRL				40
Aroclor-1016	BRL		μg/kg	99.4		BRL				40
Aroclor-1016 [2C]	BRL		μg/kg	99.4		BRL				40
Aroclor-1221	BRL		µg/kg	99.4		BRL				40
Aroclor-1221 [2C]	BRL		μg/kg	99.4		BRL				40
Aroclor-1232	BRL		µg/kg	99.4		BRL				40
Aroclor-1232 [2C]	BRL		μg/kg	99.4		BRL				40
Aroclor-1242	BRL		µg/kg	99.4		BRL				40
Aroclor-1242 [2C]	BRL		μg/kg	99.4		BRL				40
Aroclor-1248	BRL		µg/kg	99.4		BRL				40
Aroclor-1248 [2C]	8320		μg/kg	99.4		9460			13	40
Aroclor-1254	8910		µg/kg	99.4		10300)		14	40
Aroclor-1254 [2C]	2130		µg/kg	99.4		2230			5	40
Aroclor-1260	2220		µg/kg	99.4		2530			13	40
Aroclor-1260 [2C]	BRL		µg/kg	99.4		BRL				40
Aroclor-1262	BRL		µg/kg	99.4		BRL				40
Aroclor-1262 [2C] Aroclor-1268	BRL		µg/kg	99.4		BRL				40

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1018550 - SW846 3540C			u u u u u u u u u u u u u u u u u u u		The second second					
Duplicate (1018550-DUP1)			Source: SE	317436-01	Pre	epared: 30-	Aug-10 An	alyzed: 02-9	Sep-10	
Aroclor-1268 [2C]	BRL		µg/kg	99.4		BRL				40
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	82.5		μg/kg	Elizacio serve	99.4		83	30-150		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	88.4		µg/kg		99.4		89	30-150		
Surrogate: Decachlorobiphenyl (Sr)	86.0		µg/kg		99.4		87	30-150		
Surrogate: Decachiorobiphenyl (Sr) [2C]	85.5		µg/kg		99.4		86	30-150		

Notes and Definitions

F	The concentration indicated for this analyte is an estimated value	ie.	This value is considered an estimate (CLP E-flag).
			The second secon

Sample dilution required for high concentration of target analytes to be within the instrument calibration range. GS1

The surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration S01 and/or matrix interference's.

Below Reporting Limit - Analyte NOT DETECTED at or above the reporting limit BRL

Sample results reported on a dry weight basis dry

Not Reported NR

Relative Percent Difference RPD

A plus sign (+) in the Method Reference column indicates the method is not accredited by NELAC.

Laboratory Control Sample (LCS): A known matrix spiked with compound(s) representative of the target analytes, which is used to document laboratory performance.

Matrix Duplicate: An intra-laboratory split sample which is used to document the precision of a method in a given sample matrix.

Matrix Spike: An aliquot of a sample spiked with a known concentration of target analyte(s). The spiking occurs prior to sample preparation and analysis. A matrix spike is used to document the bias of a method in a given sample matrix.

Method Blank: An analyte-free matrix to which all reagents are added in the same volumes or proportions as used in sample processing. The method blank should be carried through the complete sample preparation and analytical procedure. The method blank is used to document contamination resulting from the analytical process.

Method Detection Limit (MDL): The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix type containing the analyte.

Reportable Detection Limit (RDL): The lowest concentration that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions. For many analytes the RDL analyte concentration is selected as the lowest non-zero standard in the calibration curve. While the RDL is approximately 5 to 10 times the MDL, the RDL for each sample takes into account the sample volume/weight, extract/digestate volume, cleanup procedures and, if applicable, dry weight correction. Sample RDLs are highly matrix-dependent.

Surrogate: An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. These compounds are spiked into all blanks, standards, and samples prior to analysis. Percent recoveries are calculated for each surrogate.

Continuing Calibration Verification: The calibration relationship established during the initial calibration must be verified at periodic

Validated by: Hanibal C. Tayeh, Ph.D. Nicole Leja

OAUT Reporting Trees
NAScondage Observed Trades
EAST ASSERT DESTANDED
TO TRADESTAND TO TREES
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FACILITY SUPPORT SERVICES, LLC $\underset{F \in \mathcal{G}}{Asbestos} Sampling Log$

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2685 STATE ST. HAMDEN, CT 06517 PH: 203-288-1281 FAX: 203-248-4409

Report Date: 17-Sep-10 11:45



☑ Final Report

☐ Re-Issued Report

□ Revised Report

Facility Support Services, LLC 2685 State Street

Hamden, CT 06517 Attn: Steve Daniels Project: Quinnipiac University, CT

Project #: 32510

Attn: Steve Dai	11615			
Laboratory ID	Client Sample ID	<u>Matrix</u> Brick	<u>Date Sampled</u> 12-Sep-10 00:00	Date Received 14-Sep-10 15:57
SB18098-01	32510091201	Brick	12-Sep-10 00:00	14-Sep-10 15:57
SB18098-02	32510091202	Asphalt	12-Sep-10 00:00	14-Sep-10 15:57
SB18098-03	32510091203	Asphalt	12-Sep-10 00:00	14-Sep-10 15:57
SB18098-04	32510091204	Soil	12-Sep-10 00:00	14-Sep-10 15:57
SB18098-05	32510091205	Asphalt	12-Sep-10 00:00	14-Sep-10 15:57
SB18098-06	32510091206	Asphalt	12-Sep-10 00:00	14-Sep-10 15:57
SB18098-07	32510091207	Asphalt	12-Sep-10 00:00	14-Sep-10 15:57
SB18098-08	32510091208	Asphalt	12-Sep-10 00:00	14-Sep-10 15:57
SB18098-09	32510091209	Concrete	12-Sep-10 00:00	14-Sep-10 15:5
SB18098-10	32510091210	Concrete	12-Sep-10 00:00	14-Sep-10 15:5
SB18098-11	32510091211	Brick	12-Sep-10 00:00	14-Sep-10 15:5
SB18098-12	32510091212	Brick	12-Sep-10 00:00	14-Sep-10 15:5
SB18098-13	32510091213	Concrete	12-Sep-10 00:00	14-Sep-10 15:5
SB18098-14	32510091214	Concrete	12-Sep-10 00:00	14-Sep-10 15:5
SB18098-15	32510091215	Concrete	5	

I attest that the information contained within the report has been reviewed for accuracy and checked against the quality control requirements for each method. These results relate only to the sample(s) as received. All applicable NELAC requirements have been met.

Massachusetts # M-MA138/MA1110 Connecticut # PH-0777 Florida # E87600/E87936 Maine # MA138 New Hampshire # 2538 New Jersey # MA011/MA012 New York # 11393/11840 Pennsylvania # 68-04426/68-02924 Rhode Island # 98 USDA # S-51435



Authorized by:

Hanibal C. Tayeh, Ph.D. President/Laboratory Director

Technical Reviewer's Initial:



Spectrum Analytical holds certification in the State of New York for the analytes as indicated with an X in the "Cert." column within this report. Please note that the State of New York does not offer certification for all analytes.

Please note that this report contains 16 pages of analytical data plus Chain of Custody document(s). When the Laboratory Report is indicated as revised, this report supersedes any previously dated reports for the laboratory ID(s) referenced above. Where this report identifies subcontracted analyses, copies of the subcontractor's test report are available upon request. This report may not be reproduced, except in full, without written approval from Spectrum Analytical, Inc.

Spectrum Analytical, Inc. is a NELAC accredited laboratory organization and meets NELAC testing standards. Use of the NELAC logo however does not insure that Spectrum is currently accredited for the specific method or analyte indicated. Please refer to our "Quality" web page at www.spectrum-analytical.com for a full listing of our current certifications and fields of accreditation. States in which Spectrum Analytical, Inc. holds NELAC certification are New York, New Hampshire, New Jersey and Florida. All analytical work for Volatile Organic and Air analysis are transferred to and conducted at our 830 Silver Street location (NY-11840, FL-E87936 and NJ-MA012).

CASE NARRATIVE:

The sample temperature upon receipt by Spectrum Analytical courier was recorded as 5.1 degrees Celsius. The condition of these samples was further noted as refrigerated. The samples were transported on ice to the laboratory facility and the temperature was recorded at 3.3 degrees Celsius upon receipt at the laboratory. Please refer to the Chain of Custody for details specific to sample receipt times.

An infrared thermometer with a tolerance of +/- 2.0 degrees Celsius was used immediately upon receipt of the samples.

If a Matrix Spike (MS), Matrix Spike Duplicate (MSD) or Duplicate (DUP) was not requested on the Chain of Custody, method criteria may have been fulfilled with a source sample not of this Sample Delivery Group.

Required site-specific Matrix Spike/Matrix Spike Duplicate (MS/MSD) must be requested by the client and sufficient sample must be submitted for the additional analyses. Samples submitted with insufficient volume/weight will not be analyzed for site specific MS/MSD, however a batch MS/MSD may be analyzed from a non-site specific sample.

CTDEP has published a list of analytical methods which provides a series of recommended protocols for the acquisition, analysis and reporting of analytical data in support of decisions being made utilizing the Reasonable Confidence Protocol (RCP). "Reasonable Confidence" can be established only for those methods published by the CTDEP in the RCP guidelines. The compounds and/or elements reported were specifically requested by the client on the Chain of Custody and in some cases may not include the full analyte list as defined in the method.

The CTDEP RCP requests that "all non-detects and all results below the reporting limit are reported as ND (Not Detected at the Specified Reporting Limit)". All non-detects and all results below the reporting limit are reported as "BRL" (Below the Reporting Limit) in this report.

Tetrachloro-m-xylene is recommended as a surrogate by the CTDEP RCP for the following SW846 Methods 8081, 8082 and 8151. Spectrum Analytical, Inc. uses Tetrachloro-m-xylene as the Internal Standard for these methods and Dibromooctaflourobiphenyl as the surrogate.

See below for any non-conformances and issues relating to quality control samples and/or sample analysis/matrix.

SW846 8082

Samples:

SB18098-05

32510091205

The concentration indicated for this analyte is an estimated value. This value is considered an estimate (CLP E-flag).

Aroclor-1254 [2C]

SB18098-05RE1

32510091205

Sample dilution required for high concentration of target analytes to be within the instrument calibration range.

251009120			ACCORDING TO SECURITION OF THE PERSON OF THE	Project # 2510		<u>Matrix</u> Brick	Octio	ction Date/ Sep-10 00:		-	eived ep-10	
B18098-0	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
	Organic Compounds by GC											
	ated Biphenyls by SW846 8082											
repared by	y method SW846 3540C					0.00	014040 0002	14-Sep-10	15-Sep-10	IMR	1019499	X
	Aroclor-1016	BRL		μg/kg	64.5	1	SW846 8082	14-3ep-10	"	п		X
1104-28-2	Aroclor-1221	BRL		μg/kg	64.5	1					*	×
1141-16-5	Aroclor-1232	BRL		µg/kg	64.5	1		14	19			×
3469-21-9	Aroclor-1242	BRL		µg/kg	64.5	1						×
2672-29-6	Aroclor-1248	BRL		µg/kg	64.5	1					и	×
1097-69-1	Aroclor-1254	714		µg/kg	64.5	1				4		×
1096-82-5	Aroclor-1260	326		µg/kg	64.5	1				46		×
7324-23-5	Aroclor-1262	BRL		µg/kg	64.5	1					*	X
1100-14-4	Aroclor-1268	BRL		µg/kg	64.5	1						-50-3
Surrogate re	ecoveries:								*			
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr)	86			30-150 %					**	*	
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr)	86			30-150 %			77-				
	[2C]				30-150 %					*	*	
2051-24-3	Decachlorobiphenyl (Sr)	65			30-150 %				94			
2051-24-3	Decachlorobiphenyl (Sr) [2C]	86			30-150 /6							
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Sample Id	<u>entification</u>		OI!	. Datas H		Matrix	Col	lection Dat	e/ I IIIIe	10	cccirca	
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325100912			100.00	32510		Brick		2-Sep-10 0		14	-Sep-10	
325100912 SB18098-			100.00	32510		Brick	1	2-Sep-10 0	00:00			Cer
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SB18098- CAS No. Semivolati Polychlori	Analyte(s) le Organic Compounds by GC nated Biphenyls by SW846 8082			32510		Brick	1	2-Sep-10 0	00:00			: Cer
SB18098- CAS No. Semivolati Polychlori	02 Analyte(s)	1		32510 Units	*RDL	Brick Dilution	1	2-Sep-10 0	00:00	l Analys		
SB18098- CAS No. Semivolati Polychlori	Analyte(s) le Organic Compounds by GC nated Biphenyls by SW846 8082 by method SW846 3540C	BRL		Units μg/kg	* <i>RDL</i>	Brick Dilution	Method Ref.	2-Sep-10 0	0:00 d Analyzea	l Analys	t Batch	99 X
SB18098- CAS No. Semivolati Polychlori Prepared 12674-11-2	Analyte(s) le Organic Compounds by GC nated Biphenyls by SW846 8082 by method SW846 3540C Aroclor-1016	BRL BRL		Units Units µg/kg µg/kg	*RDL	Brick Dilution	Method Ref. SW846 8082	2-Sep-10 0 Prepared 14-Sep-1	0:00 d Analyzea	Analys	t Batch	99 X
SB18098- CAS No. Semivolati Polychlori Prepared 12674-11-2 11104-28-2	Analyte(s) le Organic Compounds by GC nated Biphenyls by SW846 8082 by method SW846 3540C Aroclor-1016	BRL BRL BRL		Units Units µg/kg µg/kg µg/kg	*RDL 64.8 64.8 64.8	Brick Dilution 1 1 1	Method Ref. SW846 8082	2-Sep-10 0 Prepared 14-Sep-1	0:00 d Analyzea	Analys	t Batch	X 99 X
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SB18098- CAS No. Semivolati Polychlori Prepared 12674-11-2 11104-28-2 11141-16-5 53469-21-9	Analyte(s) le Organic Compounds by GC nated Biphenyls by SW846 8082 by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1232 Aroclor-1242 Aroclor-1248	BRL BRL BRL BRL		#9/kg #9/kg #9/kg #9/kg #9/kg #9/kg #9/kg #9/kg	*RDL 64.8 64.8 64.8 64.8 64.8	Brick Dilution 1 1 1 1 1 1 1	Method Ref. SW846 8082	2-Sep-10 0 Prepared 14-Sep-1	0:00 d Analyzed	l Analys	101949	99 >
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SB18098- CAS No. Semivolati Polychlori Prepared 12674-11-2 11104-28-2 11141-16-5 53469-21-9 12672-29-6 11097-69-1	Analyte(s) le Organic Compounds by GC nated Biphenyls by SW846 8082 by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1232 Aroclor-1242 Aroclor-1248 Aroclor-1254 Aroclor-1250	BRL BRL BRL BRL BRL 688		#g/kg #g/kg #g/kg #g/kg #g/kg #g/kg #g/kg #g/kg #g/kg	*RDL 64.8 64.8 64.8 64.8 64.8 64.8 64.8	Brick Dilution 1 1 1 1 1 1 1 1 1 1	Method Ref. SW846 8082	2-Sep-10 0 Prepared 14-Sep-1	0:00 d Analyzed	l Analys	101949	99 ×
SB18098- CAS No. Semivolati Polychlori Prepared 12674-11-2 11104-28-2 11141-16-5 53469-21-9 12672-29-6 11097-69-1 11096-82-5 37324-23-5	Analyte(s) le Organic Compounds by GC nated Biphenyls by SW846 8082 by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1232 Aroclor-1242 Aroclor-1248 Aroclor-1254 Aroclor-1250	BRL BRL BRL BRL BRL 688		Units Hg/kg Hg/kg Hg/kg Hg/kg Hg/kg Hg/kg Hg/kg Hg/kg	*RDL 64.8 64.8 64.8 64.8 64.8 64.8	Brick Dilution 1 1 1 1 1 1 1 1 1	Method Ref. SW846 8082	2-Sep-10 0 Prepared 14-Sep-1	0:00 d Analyzed	d Analys	101949	
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CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Ce
Semivolat	ile Organic Compounds by GC											
	inated Biphenyls by SW846 8082 by method SW846 3540C											
	Aroclor-1016	BRL		µg/kg	309	1	SW846 8082	14-Sep-10	15-Sep-10	IMR	1019499	×
11104-28-2	Aroclor-1221	BRL		µg/kg	309	1			-			>
11141-16-5	Aroclor-1232	BRL		µg/kg	309	1	*	*	м.			>
53469-21-9	Aroclor-1242	BRL		µg/kg	309	1	*	H	н			>
12672-29-6	Aroclor-1248	BRL		μg/kg	309	1	*					>
11097-69-1	Aroclor-1254	792		µg/kg	309	1	ж	*		311	85	×
11096-82-5	Aroclor-1260	BRL		µg/kg	309	1	*	*	*			X
37324-23-5	Aroclor-1262	BRL		μg/kg	309	1				•		X
11100-14-4	Aroclor-1268	BRL		µg/kg	309	1						×
Surrogate i	recoveries:											
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr)	75			30-150 %		•	•	*		•	
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr) [2C]	68			30-150 %		*	*)	*			
2051-24-3	Decachlorobiphenyl (Sr)	59			30-150 %		W	*		*		
2051-24-3	Decachlorobiphenyl (Sr) [2C]	71			30-150 %		•	•	•		•	
Sample Id	lentification											
32510091				Project #		<u>Matrix</u>		ection Date			ceived	
SB18098-	-04		3	2510		Asphalt	12	2-Sep-10 00	:00	14-	Sep-10	
CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Ce
Semivolati	le Organic Compounds by GC											
olychlori	nated Biphenyls by SW846 8082											
	by method SW846 3540C											
repared l		BRL		μg/kg	346	1	SW846 8082	14-Sep-10	16-Sep-10	IMR	1019499	×
repared 2674-11-2	by method SW846 3540C	BRL BRL		µg/kg µg/kg	346 346	1	SW846 8082	14-Sep-10	16-Sep-10	IMR	1019499	
repared 2674-11-2 1104-28-2	by method SW846 3540C Aroclor-1016							5.40				×
Prepared 2674-11-2 1104-28-2 1141-16-5	by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1232	BRL		µg/kg µg/kg	346	1	•	•		•	•	×
Prepared 2674-11-2 1104-28-2 1141-16-5 3469-21-9	by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1232	BRL BRL		µg/kg	346 346	1						×
Prepared 2674-11-2 1104-28-2 1141-16-5 3469-21-9 2672-29-6	by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1232 Aroclor-1242	BRL BRL BRL		µg/kg µg/kg µg/kg	346 346 346	1 1 1						> > >
Prepared 2674-11-2 1104-28-2 1141-16-5 3469-21-9 2672-29-6 1097-69-1	by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1232 Aroclor-1242 Aroclor-1248	BRL BRL BRL BRL		ha/ka ha/ka ha/ka	346 346 346 346	1 1 1						×
Prepared 2674-11-2 1104-28-2 1141-16-5 3469-21-9 2672-29-6 1097-69-1 1096-82-5	by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1232 Aroclor-1242 Aroclor-1248 Aroclor-1254	BRL BRL BRL BRL 583		haka haka haka haka haka	346 346 346 346 346	1 1 1 1						×××××
2674-11-2 1104-28-2 1141-16-5 3469-21-9 2672-29-6 1097-69-1 1096-82-5 7324-23-5	by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1232 Aroclor-1242 Aroclor-1248 Aroclor-1254 Aroclor-1260	BRL BRL BRL 583 BRL		haka haka haka haka haka	346 346 346 346 346 346	1 1 1 1 1						× × × × ×
Prepared 2674-11-2 1104-28-2 1141-16-5 3469-21-9 2672-29-6 1097-69-1 1096-82-5 7324-23-5 1100-14-4	by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1232 Aroclor-1242 Aroclor-1248 Aroclor-1254 Aroclor-1260 Aroclor-1262 Aroclor-1268	BRL BRL BRL 583 BRL BRL	773) . 181 775 Adda	haka haka haka haka haka haka haka haka	346 346 346 346 346 346 346	1 1 1 1 1 1	** ** ** ** ** ** **					× × × × ×
Prepared 2674-11-2 2674-11-2 1104-28-2 1141-16-5 3469-21-9 2672-29-6 1097-69-1 1096-82-5 7324-23-5 1100-14-4 currogate re-	by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1232 Aroclor-1242 Aroclor-1248 Aroclor-1254 Aroclor-1260 Aroclor-1262 Aroclor-1268	BRL BRL BRL 583 BRL BRL		haka haka haka haka haka haka haka haka	346 346 346 346 346 346 346	1 1 1 1 1 1	** ** ** ** ** ** **					× × × × ×
Prepared I 2674-11-2 1104-28-2 1141-16-5 3469-21-9 2672-29-6 1097-69-1 1096-82-5 7324-23-5 1100-14-4 Surrogate ro 0386-84-2	by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1232 Aroclor-1242 Aroclor-1248 Aroclor-1254 Aroclor-1260 Aroclor-1262 Aroclor-1268 ecoveries: 4,4-DB-Octafluorobiphenyl (Sr)	BRL BRL BRL 583 BRL BRL BRL		haka haka haka haka haka haka haka haka	346 346 346 346 346 346 346 346	1 1 1 1 1 1	** ** ** ** ** ** **					× × × × ×
Prepared 2674-11-2 1104-28-2 1141-16-5 i3469-21-9 2672-29-6 1097-69-1 1096-82-5 i7324-23-5 1100-14-4 Surrogate re-	by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1232 Aroclor-1242 Aroclor-1254 Aroclor-1260 Aroclor-1262 Aroclor-1268 ecoveries: 4,4-DB-Octafluorobiphenyl (Sr) 4,4-DB-Octafluorobiphenyl (Sr)	BRL BRL BRL 583 BRL BRL BRL		haka haka haka haka haka haka haka haka	346 346 346 346 346 346 346 346 346	1 1 1 1 1 1	** ** ** ** ** ** **					× × × × × × × × ×

Sample Ide 3251009120	05			Project # 2510		<u>Matrix</u> Soil		tion Date/ Sep-10 00:		-	eived Sep-10	
SB18098-0	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
	e Organic Compounds by GC											
olychlorin	ated Biphenyls by SW846 8082											
	by method SW846 3540C	DBI		μg/kg dry	20.2	1	SW846 8082	14-Sep-10	15-Sep-10	IMR	1019498	
2674-11-2	Aroclor-1016	BRL		µg/kg dry	20.2	1	W	**	-	*		×
1104-28-2	Aroclor-1221	BRL		µg/kg dry	20.2	1		· ·			28	X
11141-16-5	Aroclor-1232	BRL			20.2	1	9-			0.00		X
53469-21-9	Aroclor-1242	BRL		µg/kg dry	20.2	1	ж.		*		*	X
12672-29-6	Aroclor-1248	BRL		µg/kg dry		1				-	*	X
11097-69-1	Aroclor-1254	4,660	E	μg/kg dry	20.2	1		w			*	X
11096-82-5	Aroclor-1260	975		µg/kg dry	20.2					*		×
37324-23-5	Aroclor-1262	BRL		µg/kg dry	20.2	1						X
11100-14-4	Aroclor-1268	BRL		µg/kg dry	20.2	1		March 1			VIII - 12 10	
Surrogate r	recoveries:							н	w	ж		
	4,4-DB-Octafluorobiphenyl (Sr)	73			30-150 %				M			
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr)	75			30-150 %		*				21	
	[20]	97			30-150 %		*	**	-01		**	
2051-24-3	Decachlorobiphenyl (Sr)	74			30-150 %							
2051-24-3	Decachlorobiphenyl (Sr) [2C]		GS1									
Re-analys	sis of Polychlorinated Biphenyls b	V SVV846 6062									101016	8 X
	by method SW846 3540C	BRL		µg/kg dry	101	5	SW846 8082	14-Sep-1	0 16-Sep-1	o IMR	101949	9.55
12674-11-2		BRL		μg/kg dry	101	5		**				X
11104-28-2		BRL		μg/kg dry	101	5						X
11141-16-5	Aroclor-1232			μg/kg dry	101	5			*	*	3.0	X
53469-21-9	Aroclor-1242	BRL		µg/kg dry	101	5		***	7.0	-		X
12672-29-6	Aroclor-1248	BRL			101	5			*		-	X
11097-69-1	Aroclor-1254	6,100		µg/kg dry	101	5	*		*	34	0.50	×
11096-82-5	Aroclor-1260	1,210		µg/kg dry		5		*				X
37324-23-5	Aroclor-1262	BRL		µg/kg dry	101		w.		*		**	×
11100-14-4	Aroclor-1268	BRL		µg/kg dry	101	5						
Surrogate	recoveries:							38			*	
	4,4-DB-Octafluorobiphenyl (Sr)	100			30-150 9		. 0		34		•	
	4,4-DB-Octafluorobiphenyl (Sr)	97			30-150	%				н		
2054 24 2	[2C] Decachlorobiphenyl (Sr)	130			30-150	%	200	1002			H	
2051-24-3		90			30-150	%			9,750	8970		
	Chemistry Parameters % Solids	92.9		%		1	SM2540 G Moo	d. 14-Sep-	10 14-Sep-	10 BD	10195	501

5100912			Service of the last	Project # 2510		Matrix Asphalt		stion Date/T Sep-10 00:0			eived ep-10	
18098-0	28	Result	Flag	Units	*RDL I	Dilution	Method Ref.	Prepared A	Inalyzed	Analyst	Batch	Cert.
	Analyte(s)											
mivolatil	e Organic Compounds by GC											
olychlorin	nated Biphenyls by SW846 8082						6/2004-0.497/1025-0.49 L298-0.000	14-Sep-10 1	r Con 10	IMR	1019499	×
	by method SW846 3540C	BRL		µg/kg	371	1	SW846 8082	14-Sep-10	10-3ep-10			X
	Aroclor-1016	BRL		µg/kg	371	1			w			X
104-28-2	Aroclor-1221	BRL		µg/kg	371	1	*			и	*	X
141-16-5	Aroclor-1232	BRL		µg/kg	371	1	(41)/					X
469-21-9	Aroclor-1242	BRL		µg/kg	371	1	•				**	X
672-29-6	Aroclor-1248	1,130		μg/kg	371	1	10.00					X
1097-69-1	Aroclor-1254	BRL		µg/kg	371	1	*			2		Х
1096-82-5	Aroclor-1260	BRL		μg/kg	371	1	•	() +)		-		×
7324-23-5	Aroclor-1262	BRL		μg/kg	371	1	•	**		# 		
1100-14-4	Aroclor-1268	BKL										
urrogate	recoveries:				30-150 %		*		•	w		
	4,4-DB-Octafluorobiphenyl (Sr)	77			30-150 %			w				
0386-84-2	1704	79			30-150 /6							
	[2C]	60			30-150 %		586					
051-24-3	Decachlorobiphenyl (Sr)				30-150 %		*	(#.)				
2051-24-3	Decachlorobiphenyl (Sr) [2C]	72										
							Col	lection Date	-/Time	R	Received	
Sample 1	<u>Identification</u>		Clie	nt Project #		Matrix		2-Sep-10 0			4-Sep-10	
3251009	1207			32510		Asphalt	t .	12-3ep-10 0	,		53	
SB1809	8-07					Dilution	Method Ref.	Preparea	i Analyze	d Analy	st Batc	h Cei
CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dittition	memon my.					
Cambrole	stile Organic Compounds by GC											
Semivols	atile Organic Compounds by GC	32										
Polychlo	orinated Biphenyls by SW846 808	<u>32</u>			223	1	SW846 8082	14-Sep-1	0 16-Sep-	10 IMR	10194	199 >
Polychlo Prepare	orinated Biphenyls by SW846 808 od by method SW846 3540C	8 <u>2</u> BRL		µg/kg	333	1	SW846 8082	14-Sep-1	0 16-Sep-	10 IMR	10194	
Polychlo Prepare 12674-11-	orinated Biphenyls by SW846 808 d by method SW846 3540C 2 Aroclor-1016			µg/kg	333	1	SW846 8082			10 IMR "	R 10194	2
Polychlo Prepare 12674-11- 11104-28-	orinated Biphenyls by SW846 808 d by method SW846 3540C 2 Aroclor-1016 Aroclor-1221	BRL		µg/kg µg/kg	333 333	1				10 IMR)
Polychlo Prepare 12674-11- 11104-28- 11141-16	orinated Biphenyls by SW846 808 d by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1232	BRL BRL		µg/kg µg/kg µg/kg	333 333 333	1 1 1		3.00 S				2
Polychlo Prepare 12674-11- 11104-28- 11141-16 53469-21	orinated Biphenyls by SW846 808 d by method SW846 3540C 2 Aroclor-1016 -2 Aroclor-1221 -5 Aroclor-1232 -9 Aroclor-1242	BRL BRL BRL		µg/kg µg/kg	333 333 333 333	1 1 1						3
Polychlo Prepare 12674-11- 11104-28- 11141-16 53469-21 12672-29	orinated Biphenyls by SW846 808 d by method SW846 3540C 2 Aroclor-1016 -2 Aroclor-1221 -5 Aroclor-1232 -9 Aroclor-1242 -6 Aroclor-1248	BRL BRL BRL BRL		µg/kg µg/kg µg/kg	333 333 333 333 333	1 1 1 1						2
Polychlo Prepare 12674-11- 11104-28- 11141-16 53469-21 12672-29 11097-69	orinated Biphenyls by SW846 808 d by method SW846 3540C 2 Aroclor-1016 -2 Aroclor-1221 -5 Aroclor-1232 -9 Aroclor-1242 -6 Aroclor-1248 -1 Aroclor-1254	BRL BRL BRL BRL BRL		ha\ka ha\ka ha\ka	333 333 333 333 333 333	1 1 1 1 1)
Polychic Prepare 12674-11- 11104-28- 11141-16 53469-21 12672-29 11096-82	orinated Biphenyls by SW846 808 d by method SW846 3540C 2 Aroclor-1016 -2 Aroclor-1221 -5 Aroclor-1232 -9 Aroclor-1242 -6 Aroclor-1248 -1 Aroclor-1254 -2 Aroclor-1260	BRL BRL BRL BRL BRL		ha/ka ha/ka ha/ka	333 333 333 333 333	1 1 1 1 1						
Polychlo Prepare 12674-11- 11104-28- 11141-16- 53469-21 12672-29 11096-82 37324-23	orinated Biphenyls by SW846 808 d by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1232 Aroclor-1242 Aroclor-1248 Aroclor-1254 Aroclor-1254 Aroclor-1260 Aroclor-1262	BRL BRL BRL BRL BRL 619 BRL		ha\ka ha\ka ha\ka ha\ka	333 333 333 333 333 333	1 1 1 1 1						
Polychlo Prepare 12674-11- 11104-28- 11141-16- 53469-21- 12672-29- 11096-82- 37324-23- 11100-14-	orinated Biphenyls by SW846 808 d by method SW846 3540C 2 Aroclor-1016 -2 Aroclor-1221 -5 Aroclor-1232 -9 Aroclor-1242 -6 Aroclor-1248 -1 Aroclor-1254 2-5 Aroclor-1260 3-5 Aroclor-1262 4-4 Aroclor-1268	BRL BRL BRL BRL BRL 619 BRL BRL		halya halya halya halya halya halya	333 333 333 333 333 333 333	1 1 1 1 1))
Polychlo Prepare 12674-11- 11104-28- 11141-16- 53469-21- 12672-29- 11096-82- 37324-23- 11100-14- Surroga	orinated Biphenyls by SW846 808 d by method SW846 3540C 2 Aroclor-1016 -2 Aroclor-1221 -5 Aroclor-1232 -9 Aroclor-1242 -6 Aroclor-1248 -1 Aroclor-1254 2-5 Aroclor-1260 3-5 Aroclor-1262 4-4 Aroclor-1268 ate recoveries:	BRL BRL BRL BRL 619 BRL BRL BRL		halya halya halya halya halya halya	333 333 333 333 333 333 333	1 1 1 1 1 1 1 1						
Polychlo Prepare 12674-11- 11104-28- 11141-16 53469-21 12672-29 11097-69 11096-82 37324-23 11100-14 Surroge 10386-8	orinated Biphenyls by SW846 808 d by method SW846 3540C 2 Aroclor-1016 -2 Aroclor-1221 -5 Aroclor-1232 -9 Aroclor-1242 -6 Aroclor-1254 2-1 Aroclor-1254 2-5 Aroclor-1260 3-5 Aroclor-1262 4-4 Aroclor-1268 alte recoveries: 4-2 4,4-DB-Octafluorobiphenyl (Sr)	BRL BRL BRL BRL 619 BRL BRL BRL		halya halya halya halya halya halya	333 333 333 333 333 333 333 333	1 1 1 1 1 1 1						
Polychlo Prepare 12674-11- 11104-28- 11141-16 53469-21 12672-29 11097-69 11096-82 37324-23 11100-14 Surroge 10386-8	orinated Biphenyls by SW846 808 d by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1232 Aroclor-1242 Aroclor-1248 Aroclor-1254 Aroclor-1254 Aroclor-1260 Aroclor-1262 Aroclor-1268	BRL BRL BRL BRL 619 BRL BRL BRL		halya halya halya halya halya halya	333 333 333 333 333 333 333 30-150 9	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1)
Polychlo Prepare 12674-11- 11104-28- 11141-16 53469-21 12672-29 11097-69 11096-82 37324-23 11100-14 Surroge 10386-8	orinated Biphenyls by SW846 808 d by method SW846 3540C 2 Aroclor-1016 2 Aroclor-1221 3 Aroclor-1232 4 Aroclor-1242 4 Aroclor-1248 4 Aroclor-1254 2 Aroclor-1260 3 Aroclor-1262 4 Aroclor-1268 ate recoveries: 4-2 4,4-DB-Octafluorobiphenyl (Sr) [2C]	BRL BRL BRL BRL 619 BRL BRL BRL		halya halya halya halya halya halya	333 333 333 333 333 333 333 30-150 9	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1)

251009120 B18098-0			***************************************	Project # 2510		<u>Matrix</u> Asphalt	0.000.000.000	Sep-10 00:			eived ep-10	
	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
emivolatile	Organic Compounds by GC											
	ated Biphenyls by SW846 8082											
repared b	y method SW846 3540C				10-0-200		SW846 8082	14-Sep-10	16-Sep-10	IMR	1019499	X
2674-11-2	Aroclor-1016	BRL		µg/kg	352	1	344040 0002	"	,,			X
1104-28-2	Aroclor-1221	BRL		µg/kg	352	1		*				X
1141-16-5	Aroclor-1232	BRL		µg/kg	352	1				*	*	X
3469-21-9	Aroclor-1242	BRL		µg/kg	352	1						×
2672-29-6	Aroclor-1248	BRL		µg/kg	352	1						X
1097-69-1	Aroclor-1254	449		µg/kg	352	1			-	**	*	X
1096-82-5	Aroclor-1260	BRL		µg/kg	352	1	**					X
	Aroclor-1262	BRL		μg/kg	352	1		3.50				X
		BRL		µg/kg	352	1	**	*				
Surrogate re	ecoveries:									*	1.0	
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr)	77			30-150 %							
10386-84-2	4,4-DB-Octafluorobiphenyl (Sr) [2C]	76			30-150 %							
2051-24-3	Decachlorobiphenyl (Sr)	59			30-150 %			*		-		
2051-24-3	Decachlorobiphenyl (Sr) [2C]	74			30-150 %			•				
Sample Id	entification entification		Clien	t Project #		Matrix		lection Date		D	eceived	
325100912	209			32510		Asphalt	1	2-Sep-10 0	0:00	14	-Sep-10	
SB18098-	00											
5210070-	0)							D	1 Analyzan	Analys	t Ratch	Cer
	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzea	Analys	t Batch	Ce
CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	! Analyzed	Analys	t Batch	Ce
CAS No. Semivolati	Analyte(s) le Organic Compounds by GC nated Biphenyls by SW846 8082		Flag	Units	*RDL	Dilution	Method Ref.	Prepared	l Analyzea	Analys	t Batch	Ce
CAS No. Semivolati	Analyte(s)		Flag								t Batch	
CAS No. Semivolati Polychlorii Prepared	Analyte(s) le Organic Compounds by GC nated Biphenyls by SW846 8082		Flag	hā/kā	331	1	Method Ref. SW846 8082		Analyzed			9)
CAS No. Semivolati Polychlorii Prepared 12674-11-2	Analyte(s) le Organic Compounds by GC nated Biphenyls by SW846 8082 by method SW846 3540C		Flag	hā/kā	331 331	1 1		14-Sep-1	0 16-Sep-1	o IMR	101949	9)
CAS No. Semivolati Polychlorii Prepared 12674-11-2 11104-28-2	Analyte(s) le Organic Compounds by GC nated Biphenyls by SW846 8082 by method SW846 3540C Aroclor-1016 Aroclor-1221	BRL	Flag	hā/kā	331 331 331	1 1 1		14-Sep-1	0 16-Sep-1	o IMR	101949	9 2
CAS No. Semivolati Polychlorii Prepared 12674-11-2 11104-28-2 11141-16-5	Analyte(s) le Organic Compounds by GC nated Biphenyls by SW846 8082 by method SW846 3540C Aroclor-1016 Aroclor-1221	BRL BRL	Flag	hā/kā	331 331 331 331	1 1 1 1		14-Sep-1	0 16-Sep-1	0 IMR	101949	9 2
CAS No. Semivolati Polychlorii Prepared 12674-11-2 11104-28-2 11141-16-5	Analyte(s) Ile Organic Compounds by GC nated Biphenyls by SW846 8082 by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1232 Aroclor-1242	BRL BRL BRL	Flag	hā/kā hā/kā	331 331 331 331 331	1 1 1 1		14-Sep-1	0 16-Sep-1	0 IMR	101949	9
CAS No. Semivolati Polychlorii Prepared 12674-11-2 11104-28-2 11141-16-5 53469-21-9	Analyte(s) le Organic Compounds by GC nated Biphenyls by SW846 8082 by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1232 Aroclor-1242 Aroclor-1248	BRL BRL BRL BRL	Flag	hā\kā hā\kā hā\kā	331 331 331 331 331 331	1 1 1 1 1	SW846 8082	14-Sep-1	0 16-Sep-1	0 IMR	101949	9 2
CAS No. Semivolati Polychlorii Prepared 12674-11-2 11104-28-2 11141-16-5 53469-21-9 12672-29-6	Analyte(s) le Organic Compounds by GC nated Biphenyls by SW846 8082 by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1232 Aroclor-1242 Aroclor-1248 Aroclor-1254	BRL BRL BRL BRL BRL	Flag	hā/kā hā/kā hā/kā	331 331 331 331 331	1 1 1 1 1		14-Sep-11	0 16-Sep-1	0 IMR	101949	9)
CAS No. Semivolati Polychlorii Prepared 12674-11-2 11104-28-2 11141-16-5 53469-21-9 12672-29-6 11097-69-1 11096-82-5	Analyte(s) le Organic Compounds by GC nated Biphenyls by SW846 8082 by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1232 Aroclor-1242 Aroclor-1248 Aroclor-1254 Aroclor-1260	BRL BRL BRL BRL BRL	Flag	haka haka haka haka haka	331 331 331 331 331 331	1 1 1 1 1	SW846 8082	14-Sep-1	0 16-Sep-1	0 IMR " "	101949	9)
CAS No. Semivolati Polychlorii Prepared 12674-11-2 11104-28-2 11141-16-5 53469-21-9 12672-29-6 11097-69-1 11096-82-5 37324-23-5	Analyte(s) Ile Organic Compounds by GC nated Biphenyls by SW846 8082 by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1232 Aroclor-1242 Aroclor-1248 Aroclor-1254 Aroclor-1260 Aroclor-1260	BRL BRL BRL BRL BRL BRL	Flag	hā/kā hā/kā hā/kā hā/kā hā/kā	331 331 331 331 331 331 331	1 1 1 1 1	SW846 8082	14-Sep-11	0 16-Sep-1	0 IMR " "	101949	9 >
CAS No. Semivolati Polychlorii Prepared 12674-11-2 11104-28-2 11141-16-5 53469-21-9 12672-29-6 11097-69-1 11096-82-5 37324-23-5 11100-14-4	Analyte(s) Ile Organic Compounds by GC nated Biphenyls by SW846 8082 by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1232 Aroclor-1242 Aroclor-1248 Aroclor-1254 Aroclor-1260 Aroclor-1260	BRL BRL BRL BRL BRL BRL BRL	Flag	ha/ka ha/ka ha/ka ha/ka ha/ka ha/ka ha/ka	331 331 331 331 331 331 331 331	1 1 1 1 1 1	SW846 8082	14-Sep-1	0 16-Sep-1	0 IMR " "	101949	20 - C-11
CAS No. Semivolati Polychlorii Prepared 12674-11-2 11104-28-2 11141-16-5 53469-21-9 12672-29-6 11097-69-1 11096-82-5 37324-23-5 11100-14-4	Analyte(s) Ile Organic Compounds by GC nated Biphenyls by SW846 8082 by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1232 Aroclor-1242 Aroclor-1248 Aroclor-1254 Aroclor-1260 Aroclor-1262 Aroclor-1268 recoveries:	BRL BRL BRL BRL BRL BRL BRL	Flag	ha/ka ha/ka ha/ka ha/ka ha/ka ha/ka ha/ka	331 331 331 331 331 331 331 331	1 1 1 1 1 1	SW846 8082	14-Sep-1	0 16-Sep-1	0 IMR " "	101949	9 >
CAS No. Semivolati Polychlorii Prepared 12674-11-2 11104-28-2 11141-16-5 53469-21-9 12672-29-6 11097-69-1 11096-82-5 37324-23-5 11100-14-4 Surrogate	Analyte(s) Ile Organic Compounds by GC nated Biphenyls by SW846 8082 by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1232 Aroclor-1242 Aroclor-1248 Aroclor-1254 Aroclor-1260 Aroclor-1262 Aroclor-1268 recoveries: 4,4-DB-Octafluorobiphenyl (Sr) 4,4-DB-Octafluorobiphenyl (Sr)	BRL BRL BRL BRL BRL BRL BRL	Flag	ha/ka ha/ka ha/ka ha/ka ha/ka ha/ka ha/ka	331 331 331 331 331 331 331 331	1 1 1 1 1 1	SW846 8082	14-Sep-1	0 16-Sep-1	0 IMR " "	101949	9)
CAS No. Semivolati Polychlorii Prepared 12674-11-2 11104-28-2 11141-16-5 53469-21-9 12672-29-6 11097-69-1 11096-82-5 37324-23-5 11100-14-4 Surrogate 10386-84-2	Analyte(s) Ile Organic Compounds by GC nated Biphenyls by SW846 8082 by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1232 Aroclor-1242 Aroclor-1248 Aroclor-1254 Aroclor-1260 Aroclor-1262 Aroclor-1268 recoveries: 4,4-DB-Octafluorobiphenyl (Sr)	BRL BRL BRL BRL BRL BRL BRL	Flag	ha/ka ha/ka ha/ka ha/ka ha/ka ha/ka ha/ka	331 331 331 331 331 331 331 331	1 1 1 1 1 1	SW846 8082	14-Sep-1	0 16-Sep-1	0 IMR " "	101949	9 >

mple Iden 51009121	ntification 0		2500000	Project #		<u>Matrix</u> Concrete		tion Date/T Sep-10 00:0			eived ep-10	
318098-10		D #	Flag	Units	*RDL	Dilution	Method Ref.	Prepared .	Analyzed	Analyst	Batch	Cert.
IS No.	Analyte(s)	Result	Trug	Cilis								
mivolatile	Organic Compounds by GC											
olychlorina	ated Biphenyls by SW846 8082											
dill Some minus	method SW846 3540C	BRL		µg/kg dry	63.4	1	SW846 8082	14-Sep-10	15-Sep-10	0000	1019498	X
	Aroclor-1016	BRL		μg/kg dry	63.4	1	•	29	3.5		ii S	X
	Aroclor-1221	BRL		μg/kg dry	63.4	1		•			•	X
	Aroclor-1232			µg/kg dry	63.4	1	₩ .?				9	Х
469-21-9	Aroclor-1242	BRL		µg/kg dry	63.4	1		H		*	*	X
	Aroclor-1248			µg/kg dry	63.4	1	•		0.00	**	•	Х
097-69-1	Aroclor-1254	9,940		µg/kg dry	63.4	1	*				*	Х
	Aroclor-1260	BRL		µg/kg dry	63.4	1		90	•		н	X
324-23-5	Aroclor-1262	BRL		μg/kg dry	63.4	1			*	*	*	X
1100-14-4	Aroclor-1268	BRL		pgrkg dry								
urrogate re	coveries:									м.	*	
	4,4-DB-Octafluorobiphenyl (Sr)	33			30-150 %				12		н	
0386-84-2	4,4-DB-Octafluorobiphenyl (Sr)	35			30-150 %							
	[2C]				30-150 %				**	0.00		
051-24-3	Decachlorobiphenyl (Sr)	35			30-150 %			3.00		*	**	
051-24-3	Decachlorobiphenyl (Sr) [2C]	34										
	nemistry Parameters					1	SM2540 G Mod.	14-Sep-10	14-Sep-10	BD	101950	1
Jeneral Ch		455500 <u>0</u> 6		0/4		- 1	SIVIZO40 G IVIDG.	11 000	3.5			
Jeneral Cr	% Solids	99.0		%		- 1	3M2540 G M04.	11 000	12.			
	% Solids	99.0		%			<i>a</i>				eceived	
Sample Ide	% Solids	99.0	Clie	% nt Project #		Matrix	<u>Coll</u>	ection Date	e/Time	<u>R</u>	eceived	
Sample Ide 325100912	% Solids entification 211	99.0	Clie				<u>Coll</u>		e/Time	<u>R</u>	eceived -Sep-10	
Sample Ide	% Solids entification 211	99.0	Clie	nt Project#		Matrix Concre	<u>Coll</u> te 12	ection Date 2-Sep-10 00	<u>e/Time</u> 0:00	<u>R</u> 14	-Sep-10	
Sample Ide 325100912	% Solids entification 211	99.0 Result	<u>Clie</u> Flag	nt Project#	*RDL	Matrix	<u>Coll</u>	ection Date 2-Sep-10 00	e/Time	<u>R</u> 14	-Sep-10	
Sample Ide 325100912 SB18098- CAS No.	% Solids entification 211 11 Analyte(s)			nt Project # 32510	*RDL	Matrix Concre	<u>Coll</u> te 12	ection Date 2-Sep-10 00	<u>e/Time</u> 0:00	<u>R</u> 14	-Sep-10	
Sample Id. 325100912 SB18098- CAS No. Semivolati	% Solids entification 211 11 Analyte(s) le Organic Compounds by GC	Result		nt Project # 32510	*RDL	Matrix Concre	<u>Coll</u> te 12	ection Date 2-Sep-10 00	<u>e/Time</u> 0:00	<u>R</u> 14	-Sep-10	
Sample Ide 325100912 SB18098- CAS No. Semivolati	% Solids entification 211 11 Analyte(s) le Organic Compounds by GC nated Biphenyls by SW846 8082	Result		nt Project # 32510	*RDL	Matrix Concre	<u>Coll</u> te 12 Method Ref.	ection Date 2-Sep-10 00 Prepared	e/Time 0:00	R 14 d Analys	-Sep-10	i Cei
Sample Ide 325100912 SB18098- CAS No. Semivolati Polychlori Prepared	% Solids entification 211 11 Analyte(s) Ile Organic Compounds by GC nated Biphenyls by SW846 8082 by method SW846 3540C	Result		nt Project # 32510	*RDL	Matrix Concre	Method Ref. SW846 8082	ection Date 2-Sep-10 00 Prepared	<u>e/Time</u> 0:00	R 14 d Analys	-Sep-10	i Ces
Sample Ide 325100912 SB18098- CAS No. Semivolati Polychlori Prepared 12674-11-2	% Solids entification 211 11 Analyte(s) le Organic Compounds by GC nated Biphenyls by SW846 8082 by method SW846 3540C Aroclor-1016	Result		nt Project # 32510 Units		Matrix Concrete	<u>Coll</u> te 12 Method Ref.	ection Date 2-Sep-10 00 Prepared	e/Time 0:00	R 14 d Analys 0 IMR	-Sep-10 t Batch	98 >
Sample Id. 325100912 SB18098- CAS No. Semivolati Polychlori Prepared 12674-11-2 11104-28-2	% Solids entification 211 11 Analyte(s) le Organic Compounds by GC nated Biphenyls by SW846 8082 by method SW846 3540C Aroclor-1016 Aroclor-1221	Result BRL BRL		nt Project # 32510 Units µg/kg dry	61.5	Matrix Concrete Dilution	Method Ref. SW846 8082	ection Date 2-Sep-10 00 Prepared	2/Time 0:00 1 Analyzed 0 15-Sep-1	R 14 Analys IMR	-Sep-10 1 Batch 10194	98 >
Sample Ide 825100912 SB18098- CAS No. Semivolati Polychlori Prepared 12674-11-2 11104-28-2 11141-16-5	% Solids entification 211 11 Analyte(s) le Organic Compounds by GC nated Biphenyls by SW846 8082 by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1232	Result BRL BRL BRL		units Project # 32510 Units µg/kg dry µg/kg dry	61.5 61.5	Matrix Concrete Dilution	Method Ref. SW846 8082	ection Date 2-Sep-10 00 Prepared	2/Time 0:00 1 Analyzed 0 15-Sep-1	R 14 Analys IMR	-Sep-10 t Batch	98 >
Sample Ide \$25100912 \$B18098- CAS No. Semivolati Polychlori Prepared 12674-11-2 11104-28-2 11141-16-5 53469-21-9	% Solids entification 211 11 Analyte(s) le Organic Compounds by GC nated Biphenyls by SW846 8082 by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1232 Aroclor-1242	Result BRL BRL BRL BRL		Units Hg/kg dry Hg/kg dry Hg/kg dry	61.5 61.5 61.5	Matrix Concrete Dilution	Method Ref. SVV846 8082	ection Date 2-Sep-10 00 Prepared	2/Time 0:00 1 Analyzed 0 15-Sep-1	R 14 d Analys o IMR	-Sep-10	98 >
Sample Ide 325100912 SB18098- CAS No. Semivolati Polychlori Prepared 12674-11-2 11104-28-2 11141-16-5 53469-21-9 12672-29-6	% Solids entification 211 11 Analyte(s) le Organic Compounds by GC nated Biphenyls by SW846 8082 by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1232 Aroclor-1242 Aroclor-1248	Result BRL BRL BRL BRL BRL		Units μg/kg dry μg/kg dry μg/kg dry μg/kg dry μg/kg dry μg/kg dry	61.5 61.5 61.5 61.5	Matrix Concrete Dilution	Method Ref. SVV846 8082	ection Date 2-Sep-10 00 Prepared	2/Time 0:00 1 Analyzed 0 15-Sep-1	R 14 d Analys 0 IMR	-Sep-10	98 >
Sample Id. 325100912 SB18098- CAS No. Semivolati Polychlori Prepared 12674-11-2 11104-28-2 11141-16-5 53469-21-9 12672-29-6 11097-69-1	% Solids entification 211 11 Analyte(s) le Organic Compounds by GC nated Biphenyls by SW846 8082 by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1232 Aroclor-1242 Aroclor-1248 Aroclor-1254	Result BRL BRL BRL BRL BRL BRL 6,300		Units μg/kg dry	61.5 61.5 61.5 61.5 61.5	Matrix Concrete Dilution	Method Ref. SVV846 8082	ection Date 2-Sep-10 00 Prepared	2/Time 0:00 1 Analyzed 0 15-Sep-1	R 14 d Analys 0 IMR	-Sep-10	98 >
Sample Id. 825100912 SB18098- CAS No. Semivolati Polychlori Prepared 12674-11-2 11104-28-2 11141-16-5 53469-21-9 12672-29-6 11097-69-1 11096-82-5	% Solids entification 211 11 Analyte(s) le Organic Compounds by GC nated Biphenyls by SW846 8082 by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1232 Aroclor-1242 Aroclor-1248 Aroclor-1254 Aroclor-1250	Result BRL BRL BRL BRL BRL BRL BRL BR		units Project # 32510 Units µg/kg dry	61.5 61.5 61.5 61.5 61.5 61.5	Matrix Concrete Dilution	Method Ref. SVV846 8082	ection Date 2-Sep-10 00 Prepared	2/Time 0:00 1 Analyzed 0 15-Sep-1	R 14 Analys IMR	-Sep-10 1 Batcl	998 >> >>
Sample Ide 325100912 SB18098- CAS No. Semivolati Polychlori Prepared 12674-11-2 11104-28-2 11141-16-5 53469-21-9 12672-29-6 11097-69-1 11096-82-5 37324-23-5	% Solids entification 211 11 Analyte(s) le Organic Compounds by GC nated Biphenyls by SW846 8082 by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1232 Aroclor-1242 Aroclor-1248 Aroclor-1254 Aroclor-1260 Aroclor-1260	Result BRL BRL BRL BRL BRL BRL 6,300 BRL BRL		Here the second	61.5 61.5 61.5 61.5 61.5 61.5 61.5	Matrix Concret Dilution 1 1 1 1 1 1 1	Method Ref. SVV846 8082	ection Date 2-Sep-10 00 Prepared	2/Time 0:00 1 Analyzed 0 15-Sep-1	R 14 d Analys 0 IMR	-Sep-10	98 >
Sample Id. 825100912 SB18098- CAS No. Semivolati Polychlori Prepared 12674-11-2 11104-28-2 11141-16-5 53469-21-9 12672-29-6 11097-69-1 11096-82-5	% Solids entification 211 11 Analyte(s) le Organic Compounds by GC nated Biphenyls by SW846 8082 by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1221 Aroclor-1242 Aroclor-1242 Aroclor-1248 Aroclor-1254 Aroclor-1260 Aroclor-1260	Result BRL BRL BRL BRL BRL BRL BRL BR		units Project # 32510 Units µg/kg dry	61.5 61.5 61.5 61.5 61.5 61.5 61.5	Matrix Concrete	Method Ref. SVV846 8082	Prepared 14-Sep-11	2/Time 0:00 1 Analyzed 0 15-Sep-1	R 14 Analys IMR	-Sep-10 1 Batcl	998 >> >>
Sample Id. 325100912 SB18098- CAS No. Semivolati Polychlori Prepared 12674-11-2 11104-28-2 11141-16-5 53469-21-9 12672-29-6 11097-69-1 11096-82-5 37324-23-5	% Solids entification 211 11 Analyte(s) le Organic Compounds by GC nated Biphenyls by SW846 8082 by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1232 Aroclor-1242 Aroclor-1248 Aroclor-1254 Aroclor-1260 Aroclor-1260	Result BRL BRL BRL BRL 6,300 BRL BRL BRL		Here the second	61.5 61.5 61.5 61.5 61.5 61.5 61.5 61.5	Matrix Concrete Dilution	Method Ref. SVV846 8082	Prepared 14-Sep-11	2/Time 0:00 1 Analyzed 0 15-Sep-1	R 14 Analys IMR	-Sep-10 1 Batcl	998 >> >>
Sample Id. 325100912 SB18098- CAS No. Semivolati Polychlori Prepared 12674-11-2 11104-28-2 11141-16-5 53469-21-9 12672-29-6 11097-69-1 11096-82-5 37324-23-5 11100-14-4 Surrogate	% Solids entification 211 11 Analyte(s) le Organic Compounds by GC nated Biphenyls by SW846 8082 by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1222 Aroclor-1242 Aroclor-1248 Aroclor-1254 Aroclor-1260 Aroclor-1262 Aroclor-1262 Aroclor-1268	Result BRL BRL BRL BRL BRL BRL 6,300 BRL BRL		Here the second	61.5 61.5 61.5 61.5 61.5 61.5 61.5 61.5	Matrix Concrete Dilution	Method Ref. SVV846 8082	Prepared 14-Sep-11	2/Time 0:00 1 Analyzed 0 15-Sep-1	R 14 d Analys 0 IMR	-Sep-10 1 Batcl	998 >> >>
Sample Id. 825100912 SB18098-CAS No. Semivolati Polychlori Prepared 12674-11-2 11104-28-2 11141-16-5 53469-21-9 12672-29-6 11096-82-5 37324-23-5 11100-14-4 Surrogate 10386-84-2	% Solids entification 211 11 Analyte(s) le Organic Compounds by GC nated Biphenyls by SW846 8082 by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1222 Aroclor-1242 Aroclor-1242 Aroclor-1254 Aroclor-1254 Aroclor-1260 Aroclor-1262 Aroclor-1268 recoveries:	Result BRL BRL BRL BRL 6,300 BRL BRL BRL		Here the second	61.5 61.5 61.5 61.5 61.5 61.5 61.5 61.5	Matrix Concrete Dilution	Method Ref. SW846 8082	Prepared 14-Sep-11	2/Time 0:00 1 Analyzed 0 15-Sep-1	R 14 d Analys 0 IMR	-Sep-10 1 Batcl	998 >> >>
Sample Id. 825100912 SB18098- CAS No. Semivolati Polychlori Prepared 12674-11-2 11104-28-2 11141-16-5 53469-21-9 12672-29-6 11096-82-5 37324-23-5 11100-14-4 Surrogate 10386-84-2	% Solids entification 211 11 Analyte(s) le Organic Compounds by GC nated Biphenyls by SW846 8082 by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1232 Aroclor-1242 Aroclor-1242 Aroclor-1254 Aroclor-1260 Aroclor-1260 Aroclor-1268 recoveries: 4.4-DB-Octafluorobiphenyl (Sr)	Result BRL BRL BRL BRL 6,300 BRL BRL BRL		Here the second	61.5 61.5 61.5 61.5 61.5 61.5 61.5 30-150 %	Matrix Concret Dilution	Method Ref. SW846 8082	Prepared 14-Sep-11	2/Time 0:00 1 Analyzed 0 15-Sep-1	R 14 Analys I Analys	-Sep-10	998 >> >>
Sample Ide 825100912 SB18098- CAS No. Semivolati Polychlori Prepared 12674-11-2 11104-28-2 11141-16-5 53469-21-9 12672-29-6 11097-69-1 11096-82-5 37324-23-5 11100-14-4 Surrogate 10386-84-2 10386-84-2	% Solids entification 211 11 Analyte(s) le Organic Compounds by GC nated Biphenyls by SW846 8082 by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1232 Aroclor-1242 Aroclor-1242 Aroclor-1254 Aroclor-1254 Aroclor-1260 Aroclor-1262 Aroclor-1268 recoveries: 2 4,4-DB-Octafluorobiphenyl (Sr) 12C]	Result BRL BRL BRL 6,300 BRL BRL BRL 50 53		Here the second	61.5 61.5 61.5 61.5 61.5 61.5 61.5 61.5	Matrix Concret Dilution	Method Ref. SW846 8082	Prepared 14-Sep-11	2/Time 0:00 1 Analyzed 0 15-Sep-1	R 14 Analys I Analys	-Sep-10 1 Batcl	998 >> >>
Sample Id. 325100912 SB18098- CAS No. Semivolati Polychlori Prepared 12674-11-2 11104-28-2 11141-16-5 53469-21-9 12672-29-6 11096-82-5 37324-23-5 11100-14-4 Surrogate 10386-84-2 10386-84-2 2051-24-3 2051-24-3	% Solids entification 211 11 Analyte(s) le Organic Compounds by GC nated Biphenyls by SW846 8082 by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1232 Aroclor-1242 Aroclor-1242 Aroclor-1254 Aroclor-1260 Aroclor-1260 Aroclor-1268 recoveries: 4.4-DB-Octafluorobiphenyl (Sr) 12C] Decachlorobiphenyl (Sr)	Result BRL BRL BRL 6,300 BRL BRL BRL 50 53		Here the second	61.5 61.5 61.5 61.5 61.5 61.5 61.5 30-150 %	Matrix Concret Dilution	Method Ref. SW846 8082	Prepared 14-Sep-11	2/Time 0:00 // Analyzed	R 14 d Analys 0 IMR	-Sep-10	i Ce

51009121	ntification 12			Project # 510		<u>Matrix</u> Brick		tion Date/T Sep-10 00:0		SECTION	eived ep-10	
318098-1		Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared .	Analyzed	Analyst	Batch	Cert.
1S No	Analyte(s)	Kesuu	11115									
mivolatile	e Organic Compounds by GC											
olychlorin	ated Biphenyls by SW846 8082									19920 0		
repared b	y method SW846 3540C	nn!		µg/kg	64.6	1	SW846 8082	14-Sep-10		IMR	1019499	×
	Aroclor-1016	BRL		μg/kg	64.6	1		**	*			
104-28-2	Aroclor-1221			µg/kg	64.6	-1		*		*		X
141-16-5	Aroclor-1232	BRL		µg/kg	64.6	1	•	29	•	"		X
3469-21-9	Aroclor-1242	BRL		µg/kg	64.6	1	*		**	3.75		X
2672-29-6	Aroclor-1248	BRL		µg/kg	64.6	1	м		•	**	25	×
1097-69-1	Aroclor-1254	6,780		95	64.6	1	F-9			•		X
1096-82-5	Arodor-1260	225		µg/kg	64.6	1		-	*	8.	**	×
7324-23-5	Aroclor-1262	BRL		μg/kg	64.6	1			*	*		X
1100-14-4	Aroclor-1268	BRL		μg/kg	64.6							
Surrogate r	recoveries:							×			**	
	4,4-DB-Octafluorobiphenyl (Sr)	78			30-150 %					***		
	4,4-DB-Octafluorobiphenyl (Sr)	83			30-150 %							
	[2C]				30-150 %			2.0			**	
2051-24-3	Decachlorobiphenyl (Sr)	60			30-150 %			*			"	
2051-24-3	Decachlorobiphenyl (Sr) [2C]	72			30-100 70							
									/T:	R	eceived	
Sample Io	dentification		Clien	nt Project#		<u>Matrix</u>		lection Date		570		
Sample Io 32510091			140-140-3	nt Project# 32510		Matrix Brick		2-Sep-10 0		570	1-Sep-10	
	1213		140-140-3			Brick	1	2-Sep-10 0	0:00	14	1-Sep-10	0
32510091	1213	Result	140-140-3		*RDL	-		2-Sep-10 0		14	1-Sep-10	0
32510091 SB18098 CAS No.	1213 3-13 Analyte(s)	Result		32510		Brick	1	2-Sep-10 0	0:00	14	1-Sep-10	0
32510091 SB18098 CAS No.	Analyte(s) tile Organic Compounds by GC			32510		Brick	1	2-Sep-10 0	0:00	14	1-Sep-10	0
SB18098 CAS No. Semivola	Analyte(s) tile Organic Compounds by GC rinated Biphenyls by SW846 808			32510	*RDL	Brick Dilution	Method Ref.	2-Sep-10 0 Prepared	0:00 I Analyze	l ⁴	1-Sep-10	0 ch Ce
32510091 SB18098 CAS No. Semivola Polychlo Prepared	Analyte(s) tile Organic Compounds by GC rinated Biphenyls by SW846 808 d by method SW846 3540C			32510	*RDL	Brick Dilution	1	2-Sep-10 0 Prepared	0:00	l ⁴	1-Sep-10	0 <i>h Ce</i>
32510091 SB18098 CAS No. Semivolar Polychlor Prepared	Analyte(s) tile Organic Compounds by GC rinated Biphenyls by SW846 808 d by method SW846 3540C Aroclor-1016	2		32510 Units	*RDL	Brick Dilution	Method Ref. SW846 8082	2-Sep-10 0 Prepared 14-Sep-1	0:00 I Analyze	d Analy	1-Sep-10	0 <i>ch Ce</i>
32510091 SB18098 CAS No. Semivolat Polychlot Prepared 12674-11-2 11104-28-2	Analyte(s) tile Organic Compounds by GC rinated Biphenyls by SW846 808 d by method SW846 3540C Aroclor-1016 Aroclor-1221	<u>2</u> BRL		32510 Units µg/kg	*RDL 64.2 64.2 64.2	Brick Dilution 1 1 1	Method Ref. SW846 8082	2-Sep-10 0 Prepared 14-Sep-1	0:00 I Analyze	d Analy	1-Sep-10	0 th Ce
32510091 SB18098 CAS No. Semivola: Polychlo: Prepared: 12674-11-2 11104-28-2 11141-16-5	Analyte(s) tile Organic Compounds by GC rinated Biphenyls by SW846 808 d by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1232	2 BRL BRL		Units μg/kg μg/kg	*RDL	Brick Dilution 1 1 1 1	Method Ref. SW846 8082	2-Sep-10 0 Prepared 14-Sep-1	0:00 I Analyze 0 16-Sep-	d Analy	4-Sep-10	0 <i>h Ce</i>
32510091 SB18098 CAS No. Semivola Polychlo Prepared 12674-11-2 11104-28-2 11141-16-5 53469-21-8	Analyte(s) tile Organic Compounds by GC rinated Biphenyls by SW846 808 by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1232 Aroclor-1242	2 BRL BRL BRL		Units Units µg/kg µg/kg µg/kg	*RDL 64.2 64.2 64.2	Brick Dilution 1 1 1 1 1	Method Ref. SW846 8082	2-Sep-10 0 Prepared 14-Sep-1	0:00 I Analyze 0 16-Sep-	d Analy	4-Sep-10	0 th Ce 499
32510091 SB18098 CAS No. Semivolai Polychloi Prepared 12674-11-2 11104-28-2 11141-16-5 53469-21-4 12672-294	Analyte(s) tile Organic Compounds by GC rinated Biphenyls by SW846 808 d by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1232 Aroclor-1242 Aroclor-1248	BRL BRL BRL BRL		Units μg/kg μg/kg μg/kg μg/kg μg/kg	*RDL 64.2 64.2 64.2 64.2	Brick Dilution 1 1 1 1 1 1	Method Ref. SW846 8082	2-Sep-10 0 Prepared 14-Sep-1	0:00 I Analyze 0 16-Sep-	d Analy	4-Sep-10	0 th Ce
32510091 SB18098 CAS No. Semivola: Polychlo: Prepared: 12674-11-2 11104-28-2 11141-16-5 53469-21-5 12672-29-4 11097-69-	Analyte(s) tile Organic Compounds by GC rinated Biphenyls by SW846 808 d by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1232 Aroclor-1242 Aroclor-1248 Aroclor-1254	BRL BRL BRL BRL BRL		Units μg/kg μg/kg μg/kg μg/kg μg/kg μg/kg	*RDL 64.2 64.2 64.2 64.2 64.2	Brick Dilution 1 1 1 1 1	Method Ref. SW846 8082	2-Sep-10 0 Prepared 14-Sep-1	0:00 I Analyze 0 16-Sep-	d Analy	1019-	0 <i>h Ce</i>
32510091 SB18098 CAS No. Semivola: Polychlo: Prepared: 12674-11-2 11104-28-2 11141-16-5 53469-21-4 12672-294 11097-69- 11096-82-	Analyte(s) tile Organic Compounds by GC rinated Biphenyls by SW846 808 d by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1222 Aroclor-1242 Aroclor-1248 Aroclor-1254 Aroclor-1254 Aroclor-1260	BRL BRL BRL BRL BRL 2,420		Units μg/kg μg/kg μg/kg μg/kg μg/kg μg/kg μg/kg	*RDL 64.2 64.2 64.2 64.2 64.2 64.2	Brick Dilution 1 1 1 1 1 1	Method Ref. SW846 8082	2-Sep-10 0 Prepared 14-Sep-1	0:00 I Analyze 0 16-Sep-	d Analy	1-Sep-10	0 Ce
32510091 SB18098 CAS No. Semivola Polychlo Prepared 12674-11-2 11104-28-2 11141-16-5 53469-21-4 12672-29-4 11097-69- 11096-82- 37324-23-	Analyte(s) tile Organic Compounds by GC rinated Biphenyls by SW846 808 d by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1222 Aroclor-1242 Aroclor-1248 Aroclor-1248 Aroclor-1254 Aroclor-1260 Aroclor-1260 Aroclor-1262	BRL BRL BRL BRL BRL 2,420		Units μ9/kg μg/kg μg/kg μg/kg μg/kg μg/kg μg/kg μg/kg μg/kg	*RDL 64.2 64.2 64.2 64.2 64.2 64.2	Brick Dilution 1 1 1 1 1 1 1	Method Ref. SW846 8082	2-Sep-10 0 Prepared 14-Sep-1	0:00 I Analyze 0 16-Sep-	d Analy	1-Sep-10 st Batc	0 Ce
32510091 SB18098 CAS No. Semivola: Polychlo: Prepared: 12674-11-2 11104-28-2 11104-28-2 11109-69- 11096-82- 37324-23- 11100-14-	Analyte(s) tile Organic Compounds by GC rinated Biphenyls by SW846 808 d by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1222 Aroclor-1242 Aroclor-1248 Aroclor-1254 Aroclor-1260 Aroclor-1260 Aroclor-1262 Aroclor-1268	BRL BRL BRL BRL 2,420 223 BRL		Units μg/kg μg/kg μg/kg μg/kg μg/kg μg/kg μg/kg μg/kg	*RDL 64.2 64.2 64.2 64.2 64.2 64.2 64.2	Brick Dilution 1 1 1 1 1 1 1 1 1	Method Ref. SW846 8082	2-Sep-10 0 Prepared 14-Sep-1	0:00 I Analyze 0 16-Sep-	d Analy	1-Sep-10 st Batc	0 Ce
32510091 SB18098 CAS No. Semivola: Polychlo: Prepared: 12674-11-2 11104-28-2 11104-28-2 11141-16-5 53469-21-4 11097-69- 11096-82- 37324-23- 11100-14- Surrogati	Analyte(s) tile Organic Compounds by GC rinated Biphenyls by SW846 808 d by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1222 Aroclor-1242 Aroclor-1248 Aroclor-1254 Aroclor-1260 Aroclor-1260 Aroclor-1268 Aroclor-1268	BRL BRL BRL BRL 2,420 223 BRL BRL		Units μg/kg μg/kg μg/kg μg/kg μg/kg μg/kg μg/kg μg/kg	*RDL 64.2 64.2 64.2 64.2 64.2 64.2 64.2	Brick Dilution 1 1 1 1 1 1 1 1 1 1 1	Method Ref. SW846 8082	2-Sep-10 0 Prepared 14-Sep-1	0:00 I Analyze 0 16-Sep-	d Analy	1-Sep-10	0 Ce
32510091 SB18098 CAS No. Semivolai Polychloi Prepared 12674-11-2 11104-28-2 11104-28-2 11097-69- 11096-82- 37324-23- 11100-14- Surrogal 10386-84	Analyte(s) tile Organic Compounds by GC rinated Biphenyls by SW846 808 d by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1222 Aroclor-1242 Aroclor-1248 Aroclor-1254 Aroclor-1260 Aroclor-1260 Aroclor-1268 te recoveries: -2 4,4-DB-Octafluorobiphenyl (Sr)	BRL BRL BRL BRL 2,420 223 BRL BRL BRL		Units μg/kg μg/kg μg/kg μg/kg μg/kg μg/kg μg/kg μg/kg	*RDL 64.2 64.2 64.2 64.2 64.2 64.2 64.2 64.2	Brick Dilution 1 1 1 1 1 1 1 1 1	Method Ref. SW846 8082	2-Sep-10 0 Prepared 14-Sep-1	0:00 I Analyze 0 16-Sep-	d Analy	1-Sep-10	0 Ce
32510091 SB18098 CAS No. Semivolai Polychloi Prepared 12674-11-2 11104-28-2 11104-28-2 11097-69- 11096-82- 37324-23- 11100-14- Surrogal 10386-84	Analyte(s) tile Organic Compounds by GC rinated Biphenyls by SW846 808 d by method SW846 3540C 2 Aroclor-1016 2 Aroclor-1221 5 Aroclor-1232 9 Aroclor-1242 6 Aroclor-1248 1 Aroclor-1254 5 Aroclor-1260 5 Aroclor-1260 4 Aroclor-1268 te recoveries: -2 4,4-DB-Octafluorobiphenyl (Sr) -2 4,4-DB-Octafluorobiphenyl (Sr)	BRL BRL BRL BRL 2,420 223 BRL BRL		Units μg/kg μg/kg μg/kg μg/kg μg/kg μg/kg μg/kg μg/kg	*RDL 64.2 64.2 64.2 64.2 64.2 64.2 64.2 30-150 %	Brick Dilution 1 1 1 1 1 1 1 1 1	Method Ref. SW846 8082	2-Sep-10 0 Prepared 14-Sep-1	0:00 I Analyze 0 16-Sep-	d Analy	1-Sep-10	00 Ce
32510091 SB18098 CAS No. Semivolai Polychloi Prepared 12674-11-2 11104-28-2 11104-28-2 11097-69- 11096-82- 37324-23- 11100-14- Surrogal 10386-84	Analyte(s) tile Organic Compounds by GC rinated Biphenyls by SW846 808 d by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1222 Aroclor-1242 Aroclor-1248 Aroclor-1254 Aroclor-1260 Aroclor-1260 Aroclor-1262 Aroclor-1268 te recoveries: -2 4,4-DB-Octafluorobiphenyl (Sr) [2C]	BRL BRL BRL BRL 2,420 223 BRL BRL BRL		Units μg/kg μg/kg μg/kg μg/kg μg/kg μg/kg μg/kg μg/kg	*RDL 64.2 64.2 64.2 64.2 64.2 64.2 64.2 30-150 %	Brick Dilution 1 1 1 1 1 1 1 1 6 6	Method Ref. SW846 8082	2-Sep-10 0 Prepared 14-Sep-1	0:00 I Analyze 0 16-Sep-	d Analy	1-Sep-10	00 Ce

510091214	fication		COLUMN TO COLUMN	Project# 510		Matrix Concrete		ion Date/T ep-10 00:0			eived ep-10		-
318098-14							Method Ref.	Prepared A	Analyzed .	Analyst	Batch	Cert.	
IS No. An	alyte(s)	Result	Flag	Units	*RDL	Dilution	Methou Rej.						
mivolatile O	organic Compounds by GC												
alveblorinate	ed Biphenyls by SW846 8082										4040409	×	
epared by r	method SW846 3540C			µg/kg dry	65.5	1	SW846 8082	14-Sep-10	15-Sep-10		1019498	, ^	
674-11-2 Ar	oclor-1016	BRL		µg/kg dry	65.5	1	(w.)						
104-28-2 Ar	oclor-1221	BRL		µg/kg dry	65.5	1		34	•			X	
141-16-5 A	roclor-1232	BRL		μg/kg dry	65.5	1			••	•		X	
3469-21-9 A	roclor-1242	BRL			65.5	1	3.40	-			•	X	
2672-29-6 A	roclor-1248	BRL		µg/kg dry	65.5	1	H		-	*	*	Х	
1096-82-5 A	roclor-1260	BRL		μg/kg dry	65.5	1	и.	W-	•0	**	•	X	
7324-23-5 A	roclor-1262	BRL		µg/kg dry	65.5	1	w		м			X	
1100-14-4 A	roclor-1268	BRL		µg/kg dry	65.5								
									25	**			
Surrogate rec	overies:	43			30-150 %								
	1,4-DB-Octafluorobiphenyl (Sr)	51			30-150 %								
	1,4-DB-Octafluorobiphenyl (Sr) 2C]	***			150 0/					#C	8.6		
	Decachlorobiphenyl (Sr)	49			30-150 %				0.00	н	н		
	Decachlorobiphenyl (Sr) [2C]	48			30-150 %								
	emistry Parameters						SM2540 G Mod	14-Sep-10	14-Sep-1	o BD	10195	01	
	% Solids	99.0		%		1	SM2540 G MOG						
			Clie	nt Project #		<u>Matri</u> Concre		lection Dat 2-Sep-10 0			Received 4-Sep-1		
325100912	15		Clie	nt Project # 32510		Concre	ete I	2-Sep-10 0	00:00	1	4-Sep-1	0	Cer
Sample Ide 325100912 SB18098-1	15 5	Result	<u>Clie</u> Flag		*RDL		ete I	2-Sep-10 0		1	4-Sep-1	0	Cer
325100912 SB18098-1 CAS No.	15 5 Analyte(s)	Result		32510		Concre	ete I	2-Sep-10 0	00:00	1	4-Sep-1	0	Cer
325100912 SB18098-1 CAS No.	15 5 Analyte(s) e Organic Compounds by GC			32510		Concre	ete I	2-Sep-10 0	00:00	1	4-Sep-1	0	Cer
325100912 SB18098-1 CAS No. Semivolatil	15 5 Analyte(s) e Organic Compounds by GC mated Biphenyls by SW846 808			32510		Concre	ete l n Method Ref.	2-Sep-10 0	00:00 d Analyzo	l ed Analy	4-Sep-1	0 ch (
325100912 SB18098-1 CAS No. Semivolatil Polychlorir Prepared b	15 5 Analyte(s) e Organic Compounds by GC nated Biphenyls by SW846 808 by method SW846 3540C			32510	*RDL	Concre Dilution	ete I	2-Sep-10 0	00:00	l ed Analy	4-Sep-1	0 ch (×
325100912 SB18098-1 CAS No. Semivolatil Polychlorir Prepared b 12674-11-2	Analyte(s) e Organic Compounds by GC nated Biphenyls by SW846 808 by method SW846 3540C Aroclor-1016	32		32510 Units	*RDL	Concre	ete l n Method Ref.	2-Sep-10 0	00:00 d Analyzo	l Analy	4-Sep-1	0 ch (×
325100912 SB18098-1 CAS No. Semivolatil Polychlorir Prepared 1 12674-11-2 11104-28-2	Analyte(s) e Organic Compounds by GC mated Biphenyls by SW846 808 by method SW846 3540C Aroclor-1016 Aroclor-1221	3 <u>2</u> BRL		32510 Units µg/kg dry	*RDL	Concre Dilution	tete 1 Method Ref. SVV846 8082	2-Sep-10 0 Prepared 14-Sep-	00:00 d Analyzo 10 15-Sep-	l Analy	4-Sep-1	0 ch 0	×
325100912 SB18098-1 CAS No. Semivolatil Polychlorir Prepared t 12674-11-2 11104-28-2 11141-16-5	Analyte(s) e Organic Compounds by GC mated Biphenyls by SW846 808 by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1232	BRL BRL		Units Units µg/kg dry µg/kg dry	*RDL 65.1 65.1 65.1 65.1	Concre Dilution 1	ete l n Method Ref.	2-Sep-10 0 Prepared 14-Sep-	00:00 d Analyzo 10 15-Sep-	l Analy	4-Sep-1	0 ch 0	× ×
325100912 SB18098-1 CAS No. Semivolatil Polychlorir Prepared b 12674-11-2 11104-28-2 11141-16-5 53469-21-9	Analyte(s) e Organic Compounds by GC nated Biphenyls by SW846 808 by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1232 Aroclor-1242	BRL BRL BRL BRL		Units Units µg/kg dry µg/kg dry µg/kg dry	*RDL 65.1 65.1 65.1 65.1 65.1	Concre Dilution	SW846 8082	2-Sep-10 0 Prepared 14-Sep-	00:00 d Analyzo 10 15-Sep-	l Analy	4-Sep-1	0 ch 0	× × ×
325100912 SB18098-1 CAS No. Semivolatil Polychlorir Prepared 1 12674-11-2 11104-28-2 11141-16-5 53469-21-9 12672-29-6	Analyte(s) e Organic Compounds by GC nated Biphenyls by SW846 808 by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1232 Aroclor-1242 Aroclor-1248	BRL BRL BRL BRL BRL BRL		Units upg/kg dry upg/kg dry upg/kg dry upg/kg dry	*RDL 65.1 65.1 65.1 95.1 95.1 95.1	Dilution 1 1 1	SW846 8082	2-Sep-10 0 Prepared 14-Sep-	00:00 d Analyzo 10 15-Sep-	d Analy	4-Sep-1	0 ch C	× × × × × × × × × × × × × × × × × × ×
325100912 SB18098-1 CAS No. Semivolatil Polychlorir Prepared 1 12674-11-2 11104-28-2 11141-16-5 53469-21-9 12672-29-6 11097-69-1	Analyte(s) e Organic Compounds by GC mated Biphenyls by SW846 808 by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1232 Aroclor-1242 Aroclor-1248 Aroclor-1254	BRL BRL BRL BRL BRL 6,680		Units up/kg dry	*RDL 65.1 65.1 65.1 9 65.1 9 65.1 9 65.1	Dilution 1 1 1 1	SVV846 8082	2-Sep-10 0 Prepared 14-Sep-	00:00 d Analyzo 10 15-Sep-	d Analy	4-Sep-1	0 ch (× × × × × × × × × × × × × × × × × × ×
325100912 SB18098-1 CAS No. Semivolatil Polychlorir Prepared b 12674-11-2 11104-28-2 11141-16-5 53469-21-9 12672-29-6 11097-69-1 11096-82-5	Analyte(s) e Organic Compounds by GC nated Biphenyls by SW846 808 by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1232 Aroclor-1242 Aroclor-1248 Aroclor-1254 Aroclor-1254	BRL BRL BRL BRL BRL 6,680		Units µg/kg dry µg/kg dry µg/kg dry µg/kg dry µg/kg dry µg/kg dry	*RDL 65.1 65.1 65.1 65.1 9 65.1 9 65.1 9 65.1	Concre Dilution 1 1 1 1 1 1 1 1 1	SW846 8082	2-Sep-10 0 Prepared 14-Sep-	00:00 d Analyzo 10 15-Sep-	ed Analy	4-Sep-1	0 ch (× × × × × × × × × × × × × × × × × × ×
325100912 SB18098-1 CAS No. Semivolatil Polychlorir Prepared 1 12674-11-2 11104-28-2 11141-16-5 53469-21-9 12672-29-6 11097-69-1	Analyte(s) e Organic Compounds by GC nated Biphenyls by SW846 808 by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1232 Aroclor-1242 Aroclor-1248 Aroclor-1254 Aroclor-1254	BRL BRL BRL BRL BRL 6,680 235 BRL		Units µg/kg dry µg/kg dry µg/kg dry µg/kg dry µg/kg dry µg/kg dry µg/kg dr	*RDL 4 65.1 4 65.1 5 65.1 5 65.1 6 65.1 7 65.1 7 65.1 8 65.1	Dilution 1	SVV846 8082	2-Sep-10 0 Prepared 14-Sep-	00:00 d Analyzo 10 15-Sep-	ed Analy	4-Sep-1	0 ch (× × × × × × × × × × × × × × × × × × ×
325100912 SB18098-1 CAS No. Semivolatil Polychlorir Prepared b 12674-11-2 11104-28-2 11141-16-5 53469-21-9 12672-29-6 11097-69-1 11096-82-5 37324-23-5	Analyte(s) e Organic Compounds by GC nated Biphenyls by SW846 808 by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1232 Aroclor-1242 Aroclor-1248 Aroclor-1254 Aroclor-1254	BRL BRL BRL BRL BRL 6,680		Units upg/kg dry	*RDL 4 65.1 4 65.1 5 65.1 5 65.1 6 65.1 7 65.1 7 65.1 8 65.1	Dilution 1	SW846 8082	2-Sep-10 0 Prepared 14-Sep-	00:00 d Analyzo 10 15-Sep-	ed Analy	4-Sep-1	0 ch (× × × × × × × × × × × × × × × × × × ×
325100912 SB18098-1 CAS No. Semivolatil Polychlorir Prepared I 12674-11-2 11104-28-2 11141-16-5 53469-21-9 12672-29-6 11097-69-1 11096-82-5 37324-23-5 11100-14-4 Surrogate	Analyte(s) e Organic Compounds by GC nated Biphenyls by SW846 808 by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1232 Aroclor-1242 Aroclor-1248 Aroclor-1254 Aroclor-1260 Aroclor-1262 Aroclor-1268 recoveries:	BRL BRL BRL BRL 6,680 235 BRL BRL		Units µg/kg dry µg/kg dry µg/kg dry µg/kg dry µg/kg dry µg/kg dry µg/kg dr	*RDL 4 65.1 4 65.1 5 65.1 6 65.1 7 65.1 9 65.1 9 65.1 9 65.1 9 65.1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	SW846 8082	2-Sep-10 0 Prepared 14-Sep-	00:00 d Analyzo 10 15-Sep-	ed Analy	4-Sep-1	0 ch (×××××××××××××××××××××××××××××××××××××××
325100912 SB18098-1 CAS No. Semivolatil Polychlorir Prepared I 12674-11-2 11104-28-2 11141-16-5 53469-21-9 12672-29-6 11097-69-1 11096-82-5 37324-23-5 11100-14-4 Surrogate	Analyte(s) e Organic Compounds by GC mated Biphenyls by SW846 808 by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1232 Aroclor-1242 Aroclor-1248 Aroclor-1254 Aroclor-1260 Aroclor-1262 Aroclor-1268	BRL BRL BRL BRL 6,680 235 BRL BRL		Units µg/kg dry µg/kg dry µg/kg dry µg/kg dry µg/kg dry µg/kg dry µg/kg dr	*RDL 4 65.1 4 65.1 5 65.1 5 65.1 7 65.1 9 65.1 9 65.1 9 65.1 9 65.1 9 30-150	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	SVV846 8082	2-Sep-10 0 Prepared 14-Sep-	00:00 d Analyzo 10 15-Sep-	ed Analy	4-Sep-1	0 ch (× × × × × × × × × × × × × × × × × × ×
325100912 SB18098-1 CAS No. Semivolatil Polychlorir Prepared b 12674-11-2 11104-28-2 11141-16-5 53469-21-9 12672-29-6 11097-69-1 11096-82-5 37324-23-5 11100-14-4 Surrogate 10386-84-2	Analyte(s) e Organic Compounds by GC nated Biphenyls by SW846 808 by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1232 Aroclor-1242 Aroclor-1248 Aroclor-1254 Aroclor-1254 Aroclor-1260 Aroclor-1262 Aroclor-1268 recoveries: 4,4-DB-Octafluorobiphenyl (Sr) 4,4-DB-Octafluorobiphenyl (Sr)	BRL BRL BRL BRL 6,680 235 BRL BRL		Units µg/kg dry µg/kg dry µg/kg dry µg/kg dry µg/kg dry µg/kg dry µg/kg dr	*RDL 4 65.1 4 65.1 5 65.1 5 65.1 7 65.1 7 65.1 7 65.1 7 65.1 8 65.1 9 65.1 9 65.1 9 65.1 9 65.1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	sw846 8082	2-Sep-10 0 Prepared 14-Sep-	00:00 d Analyzo 10 15-Sep-	ed Analy	4-Sep-1	0 ch (× × × × × × × × × × × × × × × × × × ×
325100912 SB18098-1 CAS No. Semivolatil Polychlorir Prepared b 12674-11-2 11104-28-2 11141-16-5 53469-21-9 12672-29-6 11097-69-1 11096-82-5 37324-23-5 11100-14-4 Surrogate 10386-84-2	Analyte(s) e Organic Compounds by GC mated Biphenyls by SW846 808 by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1232 Aroclor-1242 Aroclor-1254 Aroclor-1254 Aroclor-1260 Aroclor-1262 Aroclor-1268 recoveries: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	BRL BRL BRL BRL 6,680 235 BRL BRL		Units µg/kg dry µg/kg dry µg/kg dry µg/kg dry µg/kg dry µg/kg dry µg/kg dr	*RDL 4 65.1 4 65.1 5 65.1 5 65.1 7 65.1 7 65.1 7 65.1 7 65.1 8 7 65.1 9 65.1 9 65.1 9 65.1 9 65.1 9 65.1 9 65.1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	SW846 8082	2-Sep-10 0 Prepared 14-Sep-	00:00 d Analyzo 10 15-Sep-	ed Analy	4-Sep-1	0 ch (× × × × × × × × × × × × × × × × × × ×
325100912 SB18098-1 CAS No. Semivolatil Polychlorir Prepared II 12674-11-2 11104-28-2 11141-16-5 53469-21-9 12672-29-6 11097-69-1 11096-82-5 37324-23-5 11100-14-4 Surrogate 10386-84-2 10386-84-2	Analyte(s) e Organic Compounds by GC nated Biphenyls by SW846 808 by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1232 Aroclor-1242 Aroclor-1248 Aroclor-1254 Aroclor-1260 Aroclor-1262 Aroclor-1268 recoveries: 4,4-DB-Octafluorobiphenyl (Sr) [2C] Decachlorobiphenyl (Sr)	BRL BRL BRL BRL 6,680 235 BRL BRL		Units µg/kg dry µg/kg dry µg/kg dry µg/kg dry µg/kg dry µg/kg dry µg/kg dr	*RDL 4 65.1 4 65.1 5 65.1 5 65.1 7 65.1 7 65.1 7 65.1 7 65.1 8 65.1 9 65.1 9 65.1 9 65.1 9 65.1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	SW846 8082	2-Sep-10 0 Prepared 14-Sep-1	00:00 d Analyzo 10 15-Sep-	ed Analy	4-Sep-1	0 ch (× × × × × × × × × × × × × × × × × × ×
325100912 SB18098-1 CAS No. Semivolatil Polychlorir Prepared II 12674-11-2 11104-28-2 11141-16-5 53469-21-9 12672-29-6 11097-69-1 11096-82-5 37324-23-5 11100-14-4 Surrogate 10386-84-2 10386-84-2 2051-24-3 2051-24-3	Analyte(s) e Organic Compounds by GC nated Biphenyls by SW846 808 by method SW846 3540C Aroclor-1016 Aroclor-1221 Aroclor-1232 Aroclor-1242 Aroclor-1248 Aroclor-1254 Aroclor-1260 Aroclor-1262 Aroclor-1268 recoveries: 4,4-DB-Octafluorobiphenyl (Sr) [2C] Decachlorobiphenyl (Sr)	BRL BRL BRL BRL 6,680 235 BRL BRL		Units µg/kg dry µg/kg dry µg/kg dry µg/kg dry µg/kg dry µg/kg dry µg/kg dr	*RDL 4 65.1 4 65.1 5 65.1 5 65.1 7 65.1 7 65.1 7 65.1 7 65.1 8 7 65.1 9 65.1 9 65.1 9 65.1 9 65.1 9 65.1 9 65.1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	SW846 8082	2-Sep-10 0 Prepared 14-Sep-1	00:00 d Analyzo	ed Analy	4-Sep-1	0 ch (

analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limi
Satch 1019498 - SW846 3540C										
Blank (1019498-BLK1)					Pre	epared: 14-	Sep-10 An	alyzed: 15-S	ep-10	
Aroclor-1016	BRL		μg/kg wet	20.0						
Aroclor-1016 [2C]	BRL		µg/kg wet	20.0						
Aroclor-1221	BRL		μg/kg wet	20.0						
Aroclor-1221 [2C]	BRL		μg/kg wet	20.0						
Aroclor-1232	BRL		μg/kg wet	20.0						
Aroclor-1232 [2C]	BRL		μg/kg wet	20.0						
Aroclor-1242	BRL		μg/kg wet	20.0						
Aroclor-1242 [2C]	BRL		μg/kg wet	20.0						
Aroclor-1248	BRL		μg/kg wet	20.0						
Aroclor-1248 [2C]	BRL		μg/kg wet	20.0						
Aroclor-1254	BRL		μg/kg wet	20.0						
Aroclor-1254 [2C]	BRL		μg/kg wet	20.0						
Aroclor-1260	BRL		μg/kg wet	20.0						
Aroclor-1260 [2C]	BRL		μg/kg wet	20.0						
Aroclor-1262	BRL		μg/kg wet	20.0		89				
Aroclor-1262 [2C]	BRL		μg/kg wet	20.0						
Aroclor-1268	BRL		μg/kg wet	20.0						
Aroclor-1268 [2C]	BRL		µg/kg wet	20.0						
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	15.6		μg/kg wet		20.0		78	30-150		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	15.9		µg/kg wet		20.0		80	30-150		
	17.4		μg/kg wet		20.0		87	30-150		
Surrogate: Decachiorobiphenyl (Sr)	16.0		μg/kg wet		20.0		80	30-150		
Surrogate: Decachlorobiphenyl (Sr) [2C]	10.0		pg/kg wet			enered: 14-		alyzed: 15-S	en-10	
LCS (1019498-BS1)	2.2			22.0		epareu. 14-	87	50-140	ep-10	
Aroclor-1016	217		μg/kg wet	20.0	250			50-140		
Aroclor-1016 [2C]	204		μg/kg wet	20.0	250		82			
Aroclor-1260	196		μg/kg wet	20.0	250		78 72	50-140 50-140		
Aroclor-1260 [2C]	180		μg/kg wet	20.0	250			Transport of the Control of the Cont		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	14.7		μg/kg wet		20.0		74	30-150		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	15.1		μg/kg wet		20.0		76	30-150		
Surrogate: Decachlorobiphenyl (Sr)	17.4		μg/kg wet		20.0		87	30-150		
Surrogate: Decachlorobiphenyl (Sr) [2C]	15.1		μg/kg wet		20.0		76	30-150		
LCS Dup (1019498-BSD1)					<u>Pr</u>	epared; 14-		alyzed: 15-S		
Aroclor-1016	214		μg/kg wet	20.0	250		85	50-140	2	30
Aroclor-1016 [2C]	206		μg/kg wet	20.0	250		82	50-140	0.7	30
Aroclor-1260	191		μg/kg wet	20.0	250		76	50-140	3	30
Aroclor-1260 [2C]	195		µg/kg wet	20.0	250		78	50-140	8	30
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	14.7		μg/kg wet		20.0		74	30-150		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	14.8		μg/kg wet		20.0		74	30-150		
Surrogate: Decachlorobiphenyl (Sr)	16.2		μg/kg wet		20.0		81	30-150		
Surrogate: Decachlorobiphenyl (Sr) [2C]	16.1		μg/kg wet		20.0		80	30-150		
atch 1019499 - SW846 3540C										
Blank (1019499-BLK1)					Pro	epared: 14-	Sep-10 An	alyzed: 15-S	ep-10	
Aroclor-1016	BRL		µg/kg	20.0						
Aroclor-1016 [2C]	BRL		µg/kg	20.0						
Aroclor-1221	BRL		µg/kg	20.0						
Aroclor-1221 [2C]	BRL		µg/kg	20.0						
Aroclor-1232	BRL		µg/kg	20.0						
Aroclor-1232 [2C]	BRL		µg/kg	20.0						
A MOSIOI - IEOE [E-O]	BRL			20.0						
Aroclor-1242	BRI		µg/kg	20.0						

	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
nalyte(s)	Resurt									
atch 1019499 - SW846 3540C					Pre	epared: 14-	Sep-10 Ar	nalyzed: 15-Se	ep-10	
Blank (1019499-BLK1)	BRL		µg/kg	20.0						
Aroclor-1248	BRL		μg/kg	20.0						
Aroclor-1248 [2C]	BRL		μg/kg	20.0						
Aroclor-1254	BRL		µg/kg	20.0						
Aroclor-1254 [2C]	BRL		µg/kg	20.0						
Aroclor-1260	BRL		µg/kg	20.0						
Aroclor-1260 [2C]	BRL		µg/kg	20.0						
Aroclor-1262	BRL		μg/kg	20.0						
Aroclor-1262 [2C]	BRL		µg/kg	20.0						
Aroclor-1268			µg/kg	20.0					200	
Aroclor-1268 [2C]	BRL				20.0		82	30-150		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	16.3		μg/kg		20.0		84	30-150		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	16.8		μg/kg		20.0		62	30-150		
Surrogate: Decachlorobiphenyl (Sr)	12.3		µg/kg		20.0		86	30-150		
Surrogate: Decachlorobiphenyl (Sr) [2C]	17.3		μg/kg			recored: 1	1-Sep-10 /	Analyzed: 15-	Sep-10	
LCS (1019499-BS1)			.00	22121	250	repared. 1	92	50-140		
Aroclor-1016	231		µg/kg	20.0			93	50-140		
Aroclor-1016 [2C]	232		µg/kg	20.0	250		77	50-140		
Aroclor-1260	192		µg/kg	20.0	250		88	50-140		
Aroclor-1260 [2C]	219		µg/kg	20.0	250					
	16.5		µg/kg		20.0		82	30-150		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	17.2		µg/kg		20.0		86	30-150		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	12.4		µg/kg		20.0		62	30-150		
Surrogate: Decachlorobiphenyl (Sr)	18.3		µg/kg		20.0		92	30-150		
Surrogate: Decachlorobiphenyl (Sr) [2C]			13557/3000		1	Prepared: 1	4-Sep-10_	Analyzed: 15		
LCS Dup (1019499-BSD1)	224		μg/kg	20.0	250		90	50-140	3	30
Aroclor-1016	226		μg/kg	20.0	250		90	50-140	3	30
Aroclor-1016 [2C]	189		µg/kg	20.0	250		76	50-140	2	30
Aroclor-1260	216		μg/kg	20.0	250		86	50-140	1	30
Aroclor-1260 [2C]			10-2/12/20		20.0		81	30-150		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	16.2		μg/kg		20.0		84	30-150		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	16.9		µg/kg		20.0		64	30-150		
Surrogate: Decachlorobiphenyl (Sr)	12.8		µg/kg		20.0		86	30-150		
Surrogate: Decachlorobiphenyl (Sr) [2C]	17.3		µg/kg				14-Sep-10	Analyzed: 15	5-Sep-10	
Duplicate (1019499-DUP1)				SB18098-01	3	BRL				40
Aroclor-1016	BRL		ha/ka	64.5		BRL				40
Aroclor-1016 [2C]	BRL		µg/kg	64.5		BRI				40
Aroclor-1221	BRL		µg/kg	64.5		BRI				40
Aroclor-1221 [2C]	BRL		µg/kg	64.5		BRI				40
Aroclor-1232	BRL		µg/kg	64.5		BRI				40
Aroclor-1232 [2C]	BRL		µg/kg	64.5		BRI				40
Aroclor-1242	BRL		μg/kg	64.5		BRI				40
Aroclor-1242 [2C]	BRL		hā/kā	64.5		BR				40
Aroclor-1248	BRL		ha/ka	64.5		BR				40
Aroclor-1248 [2C]	BRL		µg/kg	64.5		67			21	40
Aroclor-1254	839		µg/kg	64.5		71			20	40
Aroclor-1254 [2C]	873		µg/kg	64.5					8	40
Aroclor-1260	315		µg/kg			29			5	40
Aroclor-1260 [2C]	343		μg/kg			32			1073	40
Aroclor-1262	BRL		µg/kg			BR				40
Aroclor-1262 [2C]	BRL		µg/kg			BR				40
Aroclor-1268	BRL		µg/kg	64.5		BR	L			

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Satch 1019499 - SW846 3540C <u>Duplicate (1019499-DUP1)</u>	BRL		Source; SE	64.5	Pre	epared; 14- BRL	Sep-10 An	alyzed: 15-S	Sep-10	40
Aroclor-1268 [2C]					64.5		86	30-150		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	55.1		μg/kg		64.5		90	30-150		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	58.0		µg/kg µg/kg		64.5		70	30-150		
Surrogate: Decachlorobiphenyl (Sr) Surrogate: Decachlorobiphenyl (Sr) [2C]	45.4 56.4		μg/kg		64.5		88	30-150		

Notes and Definitions

The concentration indicated for this analyte is an estimated value. This value is considered an estimate (CLP E-flag).

Sample dilution required for high concentration of target analytes to be within the instrument calibration range. E GS1

Below Reporting Limit - Analyte NOT DETECTED at or above the reporting limit BRL

Sample results reported on a dry weight basis dry

Not Reported NR

Relative Percent Difference RPD

A plus sign (+) in the Method Reference column indicates the method is not accredited by NELAC.

Laboratory Control Sample (LCS): A known matrix spiked with compound(s) representative of the target analytes, which is used to document laboratory performance.

Matrix Duplicate: An intra-laboratory split sample which is used to document the precision of a method in a given sample matrix.

Matrix Spike: An aliquot of a sample spiked with a known concentration of target analyte(s). The spiking occurs prior to sample preparation and analysis. A matrix spike is used to document the bias of a method in a given sample matrix.

Method Blank: An analyte-free matrix to which all reagents are added in the same volumes or proportions as used in sample processing. The method blank should be carried through the complete sample preparation and analytical procedure. The method blank is used to document contamination resulting from the analytical process.

Method Detection Limit (MDL): The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix type containing the

Reportable Detection Limit (RDL): The lowest concentration that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions. For many analytes the RDL analyte concentration is selected as the lowest non-zero standard in the calibration curve. While the RDL is approximately 5 to 10 times the MDL, the RDL for each sample takes into account the sample volume/weight, extract/digestate volume, cleanup procedures and, if applicable, dry weight correction. Sample RDLs are highly matrix-dependent.

Surrogate: An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. These compounds are spiked into all blanks, standards, and samples prior to analysis. Percent recoveries are calculated for each surrogate.

Continuing Calibration Verification: The calibration relationship established during the initial calibration must be verified at periodic

Validated by: Hanibal C. Tayeh, Ph.D. Nicole Leja

Reasonable Confidence Protocols Laboratory Analysis QA/QC Certification Form

Laboratory Name: Spectrum Analytical, Inc.

Project Location: Quinnipiac University, CT

Sampling Date(s):

9/12/2010

Project Number: 32510 Laboratory Sample ID(s): SB18098-01 through SB18098-15

Client: Facility Support Services, LLC

RCP Methods Used:

	46 8082	34				- 1
\neg	Example analytical method referenced in this laboratory report package, were all specified QAQC	~	Y	es	N	No
1	guidelines, as specified in the CT BET means.	1	Y	es	1	No
A	Were the method specified preservation and holding time requirements met?		Y	'es		No
ıB	Were the method specified preservation and the VPH or EPH method conducted without significant modifications (see Section 11.3 of respective RCP methods)?	-		/		No
2	(see Section 11.3 of respective RCP methods): Were all samples received by the laboratory in a condition consistent with that described on the associated chain-of-custody document(s)?			Yes		No
3	victo temperature?	,	/	Yes		No
4	Were samples received at an appropriate temperature. Were all QA/QC performance criteria specified in the Reasonable Confidence Protocol documents achieved?	-	- 8	Yes	1	No
5	a) Were reporting limits specified or referenced on the chain-of-custody? * * Exceptions are defined by qualifiers			Yes	554	No
3	b) Were these reporting limits met: For each analytical method referenced in this laboratory report package, were results reported for all constituents identified in the method-specific analyte lists presented in the Reasonable Confidence Protocol constituents identified in the method-specific analyte lists presented in the Reasonable Confidence Protocol		1	Yes		No
6	constituents identified in the method-specific analy	-	1	Yes		N
7	Are project-specific matrix spikes and laboratory duplicates included in this data set? Are project-specific matrix spikes and laboratory duplicates included in this data set?	n must be	e			

Note: For all questions to which the response was "No" (with the exception of question #7), additional information must be provided in an attached narrative. If the answer to question #1, #1A, or #1B is "No", the data package does not meet the requirements for "Reasonable Confidence."

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for obtaining the information contained in this analytical report, such information is accurate and complete.

> Hanibal C. Tayeh, Ph.D. President/Laboratory Director

Date: 9/17/2010

Special Handling:

Special Handing.	Ed Rush TAT - Date Needed: 1/17/16/ All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes. Samples disposed of alter 60 days unless	(9) 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Co. C.	Tr. 11 State.	QA/QC Reporting Notes: • additional charges may apply MAA DEP MCP CAM teport: Ves No D	CT DPH RCP Report. Yes. I No. QA/QC Reporting Level QA/QC Reporting Level DStandard DNo QC DDQA* DNY ASP A* DNY ASP H* DNY ASP A* DNY ASP H*	Other State-specific reporting standards:					A TOTAL STATE	T Theorem T Discourse of Discou	
T Standard T	- · · · ·		Project No.: 3.4	11 11 11 11	OH List preservative o	Glass fair	of Clear	#	× × ×			15 J.		
	JSTC	Page 01	Invoice To:		P.O. No.: RQN: A-IINO1 S-NaOII 6-Ascorbic Acid 7-CH	WW-Wastewater SI. Shudge A-Air X3- A-Air A-Air Y3- A-Air A-Air	eq. xins. aurix 0.0 VOA	# N X	1	85 X X		Received by: 9-11-11 St. Date:		
	8	SPICTRUM ANALYTICAL, INC.	Report To:	May 25 55 10 10	Project Mgr. 5=HCl 3=H ₃ SO ₄	9= Deionized Water nter GW=Groundwater face Water SO Soil X2-	G=Grab C=Composite	Lab Id: Sample Id: D	5,5		Constitution of State of the St	C SECTION OF THE STATE OF THE SECTION OF THE SECTIO	The Klient	

Special Handling: Slandard TAT - 7 to 10 business days P.Rush TAT - Date Needed: - 7 f 1 All TATS subject to laboratory approval. Min. 24-hour notification needed for rishes. Samples disposed of after 60 days unless otherwise instructed.	below: QA/QC Reporting Notes: additional charges may apply an Diff MCP CAM Report: Vec I Not CT DPILI RCP RCP REPORT: Vec I Not CT DPILI RCP	ELE-mail to Anthony load Redinguished lindge temp 'C linear temp
CHAIN OF CUSTODY RECORD PRINCE TO: Project No.:	Ascorbic Acid 7=CH-iOH Alauriv Alauriv Analyses: An	
SEPECTRUM ANALYTICAL, INC. Parametricularises Report To: Sept. T	P.O. No.: Project Mgr. 1	Received by: (C. C. M. H. C. M. H. L. M. O.10)



80 Lupes Drive Stratford, CT 06615

Tel: (203) 377-9984 Fax: (203) 377-9952 e-mail: cet1@cetlabs.com

Client:

Mr. Steve Daniels Facility Support Services 2685 State Street Hamden, CT 06517

Analytical Report

CET # 10090613

Report Date: October 1, 2010

Client Project: QU Student Center, Hamden

Client Project #: 32510



Page 2 of 4

October 1, 2010

Project#: 32510 CET#: 10090613

Project: QU Student Center, Hamden

SAMPLE SUMMARY:

This report contains analytical data associated with the following samples only:

AE51476 32510092603 AE51477 32510092603 AE51478 32510092603 AE51479 32510092603 AE51480 3251009260	Solid Solid Solid Solid	9/26/2010 9/26/2010 9/26/2010 9/26/2010 9/26/2010 9/26/2010	12:00 12:00	Receipt Date 09/27/2010 09/27/2010 09/27/2010 09/27/2010 09/27/2010
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Sample temperature upon receipt was 3.0 degrees C

PREP ANALYSIS:

Soxhlet Extract	ion [EPA 354 32510092601	AE51477	32510092603 AE51478 9/28/2010	32510092604 AE51479 9/28/2010	32510092605 AE51480 9/28/2010
Date Analyzed	9/28/2010	9/28/2010	7/20/2011		

ANALYSIS:

Client ID 325100 CET ID AE5147 Date Analyzed 9/30/20	6 AE51477	AE51478 9/30/2010 100		32510092605 AE51480 9/29/2010 91
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PA 8082 PCBs [EPA Client ID CET ID Date Analyzed	32510092601 AE51476 9/30/2010 5.0	AE51477 9/30/2010 5.0	AE51478 9/30/2010 5.0	32510092604 AE51479 9/30/2010 5.0 ND < 1.3	32510092605 AE51480 9/30/2010 4.0 ND < 1.1
Dilution PCB-1016 PCB-1221 PCB-1232 PCB-1242 PCB-1248 PCB-1254 PCB-1260 PCB-1268 TCMX (Surr 1) 50-150	ND < 1.3 ND < 1.3 ND < 1.3 ND < 1.3 ND < 1.3 ND < 1.3 ND < 1.3 76	ND < 1.3 ND < 1.3 87	ND < 1.3 ND < 1.3	ND < 1.3 ND < 1.3 ND < 1.3 ND < 1.3 7.1 ND < 1.3 ND < 1.3 86 179	ND < 1.1 ND < 1.1 ND < 1.1 ND < 1.1 4.0 ND < 1.1 ND < 1.1 99 97

Page 3 of 4

October 1, 2010

Project#: 32510 CET#: 10090613

Project: QU Student Center, Hamden

Questions related to this report should be directed to David Ditta, Timothy Fusco, or Robert Blake at 203-377-9984.

Sincerely,

Laboratory Director

Report Comments:

1. ND is None Detected at the specified detection limit.

- 2. All analyses were performed in house unless a Reference Laboratory is listed.
- 3. Samples will be disposed of 30 days after the report date.
- 4. Sample Result Flags:
 - E The result is estimated, above the calibration range.
 - H The surrogate recovery is above the control limits.
 - L The surrogate recovery is below the control limits.
 - B The compound was detected in the laboratory blank.
 - P The Relative Percent Difference (RPD) of dual column analyses exceeds 40%.
 - D The RPD between the sample and the sample duplicate is high. Sample homogeneity may be a problem.
- 5. All results met standard operating procedures unless indicated by a data qualifier next to a sample result, or a narration in the QC report.

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CET# Volatile S Client: CET: CET:	COL ETPH REZO OT LLET REZO OT LLET REZO OT LLET REZO PALA TOLE PALA TOL		OTES: Need 1262 14 Fried Months	Company Name Address Address Report To: State
0	9954 And Turnaround Scales (Specify) (CH Carlos Days (Specify) (CH C	NaOH, C=Cool, O-Oliver)	NO 2-1	Froject C Location: Location: Location: AA/QC Data Rep RSR Rep RSR Rep RSR Rep E-mail Lab Use Evidenc Temp Use When the samples are received at the Lab and all issues at
COMPLETE ENTRODIMENTAL TESTING, INC.	80 Lupes Drive Fax: (203) 377-9984 Stratford, CT 06615 e-mail: cet1 @cetlabs.com	VI OY WIND CHASOL Na-NaOH, C=Cool, O-Oliver)	PHESERVATIVE (GI-HOL, N-11102), C. CONTAINER TYPE (P-Plastic, G-Glass, V-Vial, O-Other) Soil VOCS Only (M-MoOH B-Bistillan W-Water F- RELIFOLISHED BY: C.	Company Name Company Name Address Address City Report To: Phone N

Project#: 32510 Project: QU Student Center, Hamden



80 Lupes Drive Stratford, CT 06615 Tel: (203) 377-9984 Fax: (203) 377-9952 e-mail: cet1@cetlabs.com

Client:

Mr. Steven Daniels Facility Support Services 2685 State Street Hamden, CT 06517

Analytical Report

CET # 10100072

Report Date: October 7, 2010 Client Project: QU Alumni Hall

Client Project #: 32510

Project#: 32510 Cet#: 10100072 Project: QU Alumni Hall

SAMPLE SUMMARY:

This report contains analytical data associated with the following samples only:

Matrix	Collection Date
Solid	10/4/2010
Dona	10/4/2010
	Solid Solid

Sample temperature upon receipt was 10.4 degrees C

PREP ANALYSIS:

Soxhlet Extraction [EPA 3540C]

Soxhlet Extrac	tion [EPA 3540C]	Alumni Hall Int Whit
CET ID	Rm 205 White Faint	AE52214 10/5/2010

ANALYSIS:

Total Solids [EPA 160.3 mo] Units: percent

Total Solids IF	PA 160.3 mo Units	s: percent
Client ID	Rm 205 White Paint	
CET ID	AE52213 10/6/2010 100	AE52214 10/6/2010 100

	Rm 205 White Paint	Thuman Table
Client ID CET ID Date Analyzed Dilution PCB-1016 PCB-1221 PCB-1232 PCB-1242 PCB-1248 PCB-1254 PCB-1260 TCMX (Surr 1) DCB (Surr 2)	AE52213 10/6/2010 12.0 ND < 3.0 ND < 3.0 ND < 3.0 ND < 3.0 ND < 3.0 + 10 ND < 3.0	AE52214 10/6/2010 38.0 ND < 9.5 ND < 9.5 ND < 9.5 ND < 9.5 14 26 ND < 9.5 + +

⁺Surrogate diluted out.

October 7, 2010

Project#: 32510 Cet#: 10100072

Project: QU Alumni Hall

Report Comments:

- 1. ND is None Detected at the specified detection limit.
- 2. All analyses were performed in house unless a Reference Laboratory is listed.
- 3. Samples will be disposed of 30 days after the report date.
- 4. Sample Result Flags:
 - E The result is estimated, above the calibration range.
 - H The surrogate recovery is above the control limits.
 - L The surrogate recovery is below the control limits.
 - B The compound was detected in the laboratory blank.
 - P The Relative Percent Difference (RPD) of dual column analyses exceeds 40%.
 - D The RPD between the sample and the sample duplicate is high. Sample homogeneity may be a problem.

Sincerely, IN List

David Ditta

Laboratory Director

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3	Additional charge may apply.
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	32510 00072 00 Alum Pront To: Stort

Soils Only: Date and Time in Freezer Additional Analysis Additional Analysis		red #: Clark Clark
2USTODY RECORD 2.USTODY RECORD 2.0 Palogens 2.0 Palogens 3.2 Priority Polit 3.2 Priority Polit 3.2 Priority Polit 4.0 Fallered 5.2 DVA 5.2 Palogens 6.2 Sold Fallered 7.2 Palogens 6.3 Priority Polit 7.2 Palogens 6.4 Palogens 7.2 Palogens 7.4 Palogens 7.5 Palogens 7.5 Palogens 7.6 Palogens 7.6 Palogens 7.7 Palogens 7.	14	Calass, V-Vial, O-Other) Calass, V-Vial, O-O
	5) PIS	PRESERVATIVE (CI-HCI, N-HNO ₂ , S-H ₂ SO ₄ , Na-NaOH, C ₂ Cool, O-Other) CONTAINER TYPE (P-Plashc, G-Glass, V-Vial, O-Other) Soil VOCs Only (M-C)H Be Signified W-Water F= Vial BT Soil VOCs Only (M-C)H Be Signified W-Water F= Vial BT RELINGUISHED BY: DATETIME RECEIVED BY: Company Name Company Name City State State State Fax # Phone #

Complete Environmental Testing, Inc.



80 Lupes Drive Stratford, CT 06615 Tel: (203) 377-9984 Fax: (203) 377-9952 e-mail: cet1@cetlabs.com

Client:

Mr. Steve Daniels Facility Support Services 2685 State Street Hamden, CT 06517

Analytical Report

CET # 10100213

Report Date: November 3, 2010 Client Project: QU Alumni Hall Student Center Client Project #: 32510



Project#: 32510 CET#: 10100213

Project: QU Alumni Hall Student Center

SAMPLE SUMMARY:

This report contains analytical data associated with the following samples only:

	contains analytical			Collection Time	Receipt Date
CETID	Client Sample ID	Matrix	Collection Date	the state of the s	10/11/2010
		Solid	10/8/2010		10/11/2010
E52692		Solid	10/8/2010		10/11/2010
E52693		Solid	10/8/2010	1	10/11/2010
AE52694 AE52695		Solid	10/8/2010		

Sample temperature upon receipt was na degrees C

PREP ANALYSIS:

oxhlet Extrac	tion [EPA 35	540C]	003	004
Client ID	001	002	VE52694	AE52695
CET ID	AE52692	AE52693 10/11/2010	1 (0040	10/11/2010
Date Analyzed	10/11/2010	10/11/2010		

ANALYSIS:

Total Solids [EPA 160.3 mo] Units: percent

Total Solids [F	EPA 160.3 mo			004
Date Analyzed	10/11/2010	ALSZOSS	AE52694 10/11/2010 100	AE52695 10/11/2010 100
Total Solids	100	100		

PA 8082 PCBs [EPA	10002	002	004
Client ID CET ID Date Analyzed Dilution PCB-1016 PCB-1221 PCB-1232 PCB-1242 PCB-1248 PCB-1254 PCB-1260 PCB-1268 TCMX (Surr 1) 50-150 DCB (Surr 2) 50-150	001 AE52692 10/12/2010 5.0 ND < 1.3	AE52693 10/12/2010 4.0 ND < 1.0 ND < 1.0	AE52695 10/12/2010 2.2 ND < 0.60 ND < 0.60 SO < 0.60 ND < 0.60

Page 3 of 4 Project#: 32510

CET#: 10100213

Questions related to this report should be directed to David Ditta, Timothy Fusco, or Robert Blake at 203-377-9984. Project: QU Alumni Hall Student Center

November 3, 2010

Sincerely,

David Ditta Laboratory Director

- Report Comments: 1. ND is None Detected at the specified detection limit.
 - 2. All analyses were performed in house unless a Reference Laboratory is listed.
 - 3. Samples will be disposed of 30 days after the report date.
 - 4. Sample Result Flags:
 - E The result is estimated, above the calibration range.
 - H The surrogate recovery is above the control limits.
 - L The surrogate recovery is below the control limits.
 - B The compound was detected in the laboratory blank.
 - P The Relative Percent Difference (RPD) of dual column analyses exceeds 40%.
 - D The RPD between the sample and the sample duplicate is high. Sample homogeneity may be a problem.
 - 5. All results met standard operating procedures unless indicated by a data qualifier next to a sample result, or a narration in the QC report.

107AL * OF CONT.	ncity)
Volatile Soils Only: Client: CET: Additional Analysis SPLP TOTAL	Project Information Coalector(s): SDJCH Coalector
CHAIN OF CLS Chain Off	NOTES: NOTES: ATT ATT A SAMMAI A SAM
Matrix NT-9984 Ann NT-9982 Newson Non-bread of Concessed Sold Non-Concessed Sold Non-Conc	
Sample ID Sample ID Date Sample ID Date COS Wall Daint 10108	PHESERVATIVE (G-HC), N-HNO, S-H,5O, N CONTAINER TYPE (P-Plastic, G-Gass, V-V CONTAINER TYPE (P-Plastic, G-Gass, V-V CONTAINER Sold VORS Only (M-MoOH DATETIME RELINQUISHED BY: OATETIME RELINQUISHED BY: COMPANY Name Additional Charge may apply. ** T Additional charge may apply. ** T



80 Lupes Drive Stratford, CT 06615 Tel: (203) 377-9984 Fax: (203) 377-9952 e-mail: cet1@cetlabs.com

Client:

Mr. Steve Daniels Facility Support Services 2685 State Street Hamden, CT 06517

Analytical Report

CET # 10100256r

Report Date: November 11, 2010 Client Project: Quinnipiac University, Roof Alumni Hall Client Project #: 32510



Project#: 32510

CET#: 10100256r Project: Quinnipiac University, Roof Alumni Hall

SAMPLE SUMMARY:

This report contains analytical data associated with the following samples only:

ins report	contains analytical data as			Collection Time	Receipt Date
CETID	Client Sample ID	Matrix	Collection Date	Gones	10/12/2010
CETID	01 Roof Caulking	Solid	10/11/2010		10/12/2010
AE52873	02 Roof Caulking	Solid	10/11/2010		10/12/2010
AE52874	03 Roof Caulking	Solid	10/11/2010		10/12/2010
AE52875	Surface A 1.5in Bric	Solid	10/11/2010		10/12/2010
AE52876	Hallway 117A 2.5in B	Solid	10/11/2010		10/12/2010
AE52877	Hallway 117A 2.5in B	Solid	10/11/2010		10/12/2010
AE52878	Hallway 117A 4.5in B	Solid	10/11/2010		10/12/2010
AE52879	Hallway 117B 1.5in B	Solid	10/11/2010	1	10/12/2010
AE52880	Hallway 117B 2.5in B	Solid	10/11/2010		10/12/2010
AE52881	Hallway 117B 4.5in B	Solid	10/11/2010		10/12/2010
AE52882	Wall A 1.5in Concret	Solid	10/11/2010	A	10/12/2010
AE52883	Wall A 2.5in Concret	Solid	10/11/2010		10/12/2010
AE52884	Wall A 4.5in Concret	Solid	10/11/2010		10/12/2010
AE52885	Wall B 1.5in Concret	Solid	10/11/2010		10/12/2010
AE52886	Wall B 2.5in Concret	Solid	10/11/2010		10/12/2010
AE52887	Wall B 4.5in Concret	Solid	10/11/2010		10/12/2010
AE52888	Wall C 1.5in Concret	Solid	10/11/2010		10/12/2010
AE52889	Wall C 2.5 Concrete	Solid	10/11/2010		10/12/2010
AE52890	Wall C 4.5in Concret	Solid	10/11/2010		10/12/2010
AE52891	Rm 207 Wall A 1.5in	Solid	10/11/2010	TI K	10/12/2010
AE52892	Rm 207 Wall A 2.5in	Solid	10/11/2010		10/12/2010
AE52893	Rm 207 Wall A 4.5in		10/11/2010		10/12/2010
AE52894	Rm 207 Window Sill	Solid	10/11/2010	1	10/12/2010
AE52895	Alum Hall Window 01	Solid	10/11/2010		10/12/2010
AE52896	Alum Hall Window 02	Solid	10/11/2010		10/12/2010
AE52897	Rm 207 Wall B 1.5in	Solid	10/11/2010		10/12/2010
AE52898	Rm 207 Wall B 2.5in	Solid	10/11/2010		10/12/2010
AE52899	Rm 207 Wall B 4.5in	Solid	10/11/2010		10/12/2010
AE52900	Rm 207 Wall C 1.5in	Solid	10/11/2010		10/12/2010
AE52901	Rm 207 Wall C 2.5in	Solid	10/11/2010		10/12/2010
AE52901 AE52902	Rm 207 Wall C 4.5in	Solid	10/11/2010		

Sample temperature upon receipt was 4.6 degrees C

PREP ANALYSIS:

Soxhlet Extrac	tion [EPA 3540C	02 Roof Caulking	03 Roof Caulking	Surface A 1.5in Bric
Client ID CET ID Date Analyzed	AE52873	AE52874 10/12/2010	AE52875 10/12/2010	AE52876 10/12/2010

Soxhlet Extrac	tion [EPA 3540C]	Hallway 117A 4.5in B	Hallway 117B 1.5in B	Hallway 117B 2.5in B AE52880
Client ID CET ID	AE52877	AE52878 10/12/2010	AE52879 10/12/2010	10/12/2010
Date Analyzed	10/12/2010			

Project#: 32510

Page 3 of 9

November 11, 2010

CET#: 10100256r

Project: Quinnipiac University, Roof Alumni Hall

Soxhlet Extrac	tion [EPA 3540C]	Wall A 1.5in Concret	Wall A 2.5in Concret	Wall A 4.5in Concret
Client ID CET ID	Hallway 117B 4.5in B AE52881	AE52882	AE52883 10/12/2010	AE52884 10/12/2010
Date Analyzed	10/12/2010	10/12/2010		

Soxhlet Extrac	tion [EPA 3540C]	Wall B 2.5in Concret	Wall B 4.5in Concret	Wall C 1.5in Concret
Client ID	Wall B 1.5in Concret AE52885	AE52886	AE52887 10/12/2010	AE52888 10/13/2010
Date Analyzed	10/12/2010	10/12/2010	10/ 12/	

Soxhlet Extrac	tion [EPA 3540C]	Wall C 4.5in Concret	Rm 207 Wall A 1.5in	Rm 207 Wall A 2.5in
CET ID	AE52889	AE52890 10/13/2010	AE52891 10/13/2010	AE52892 10/13/2010
Date Analyzed	10/13/2010			

Client ID Rm 207 Wall A 4.5in Rm 207 Window Sill Alum Hall Window	
CET ID AE52893 AE52894 AE52993 Date Analyzed 10/13/2010 10/13/2010 10/13/2010	AE52896 10/13/2010

Client ID CET ID	AE52897	Rm 207 Wall B 2.5in AE52898 10/13/2010	Rm 207 Wall B 4.5in AE52899 10/13/2010	Rm 207 Wall C 1.5in AE52900 10/13/2010
Date Analyzed	10/13/2010	10/15/2010		

Soxhlet Extraction [EPA 3540C]

Soxhlet Extrac	tion [EPA 3540C]	Rm 207 Wall C 4.5in
Client ID	Rm 207 Wall C 2.5in	
CETID	AE52901 10/13/2010	AE52902 10/13/2010
Date Analyzed	10/10/	

November 11, 2010 Page 4 of 9

Project#: 32510

CET#: 10100256r

Project: Quinnipiac University, Roof Alumni Hall

ANALYSIS:

Client ID CET ID Date Analyzed Dilution PCB-1016 PCB-1211 PCB-1232 PCB-1242 PCB-1248 PCB-1248 PCB-1254 PCB-1260 PCB-1268 TCMX (Surr 1) 50-150 DCB (Surr 2) 50-150	AE52873 11/11/2010 4.0 ND < 1.0 ND < 1.0	AE52874 11/11/2010 5.0 ND < 1.0 ND < 1.0	03 Roof Caulking* AE52875 10/12/2010 4.0 ND < 1.0 The control of the co	Surface A 1.5in Bric AE52876 10/13/2010 2.0 ND < 0.50 AD < 0.50 ND < 0.50
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^{*}Extract was no longer available and no sample was left to re-extract, therefore, estimated value was reported.

Client ID Hallway 117A 2.5in B CET ID AE52877 Date Analyzed 10/14/2010 PCB-1016 ND < 2.0 PCB-1221 ND < 2.0 PCB-1232 ND < 2.0 PCB-1242 PCB-1248 PCB-1254 PCB-1260 PCB-1260 PCB-1268 TCMX (Surr 1) 50-150 +	kg (Dry Wt) Hallway 117A 4.5in B AE52878 10/13/2010 4.0 ND < 1.0 One in the control of the control o	Hallway 117B 1.5in B AE52879 10/13/2010 4.0 ND < 1.0 Second	Hallway 117B 2.5in B AE52880 10/13/2010 2.0 ND < 0.50 0.74 ND < 0.50 ND < 0.50 ND < 0.50 Second
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Client ID CET ID Date Analyzed Dilution PCB-1016 PCB-1221 PCB-1232 PCB-1242 PCB-1242 PCB-1248 PCB-1254 PCB-1260 PCB-1268 TCMX (Surr 1) 50-150 DCB (Surr 2) 50-150	A 8082] Units: Mg/K Hallway 117B 4.5in B AE52881 10/13/2010 2.0 ND < 0.50 ND < 0.50 1.1 ND < 0.50 ND < 0.50	Wall A 1.5in Concret AE52882 10/14/2010 4.0 ND < 1.0 See	Wall A 2.5in Concret AE52883 10/13/2010 2.0 ND < 0.50 85 86	Wall A 4.5in Concret AE52884 10/13/2010 2.0 ND < 0.50
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November 11, 2010 Page 5 of 9

Project#: 32510 CET#: 10100256r

Project: Quinnipiac University, Roof Alumni Hall

EPA 8082 PCBs [EP.	A 8082] Units: mg/l	kg (Dry Wt)	Wall B 4.5in Concret	Wall C 1.5in Concret
Client ID CET ID Date Analyzed Dilution PCB-1016 PCB-1221 PCB-1232 PCB-1242 PCB-1248 PCB-1254 PCB-1260 PCB-1268 TCMX (Surr 1) 50-150 DCB (Surr 2) 50-150	Wall B 1.5in Concret AE52885 10/14/2010 4.0 ND < 1.0 Solve the second s	Wall B 2.5in Concret AE52886 10/13/2010 2.0 ND < 0.50 1.3 ND < 0.50 ND < 0.50 1.7 ND < 0.50 ND < 0.50 ND < 0.50	AE52887 10/13/2010 2.0 ND < 0.50 ND < 0.50	AE52888 10/18/2010 2.0 ND < 0.50 ND < 0.50 ND < 0.50 ND < 0.50 ND < 0.50 2.7 ND < 0.50 ND < 0.50 113 98

PA 8082 PCBs [EP.	A 8082] Units: mg/	Wall C 4.5in Concret	Rm 207 Wall A 1.5in	Rm 207 Wall A 2.5ir
Client ID CET ID Date Analyzed Dilution PCB-1016 PCB-1221 PCB-1232 PCB-1242 PCB-1248 PCB-1254 PCB-1260 PCB-1268	Wall C 2.5 Concrete AE52889 10/14/2010 1.0 ND < 0.30 O.47 ND < 0.30 ND < 0.30	Wall C 4.5in Concret AE52890 10/14/2010 1.0 ND < 0.30 ND < 0.30	AE52891 10/18/2010 2.0 ND < 0.50 ND < 0.50 ND < 0.50 ND < 0.50 ND < 0.50 ND < 0.50 ND < 0.50 120	AE52892 10/14/2010 2.0 ND < 0.50 ND < 0.50
TCMX (Surr 1) 50-150 DCB (Surr 2) 50-150	83 72	91	107	83

PA 8082 PCBs [EP.	Rm 207 Wall A 4.5in	Rm 207 Window Sill	Alum Hall Window 01	Alum Hall Window 02 AE52896
Chent ID CET ID Date Analyzed Dilution PCB-1016 PCB-1221 PCB-1232 PCB-1242 PCB-1248 PCB-1254 PCB-1260 PCB-1268 TCMX (Surr 1) 50-150 DCB (Surr 2) 50-150	AE52893 10/14/2010 2.0 ND < 0.50 ND < 0.50	AE52894 10/18/2010 67.0 ND < 17 ND < 17 ND < 17 ND < 17 ND < 17 54 ND < 17 ND < 17 + +	AE52895 10/19/2010 20.0 ND < 5.0 ND < 5.0 ND < 5.0 ND < 5.0 27 ND < 5.0 ND < 5.0 ND < 5.0 + +	NE 32970 10/19/2010 20.0 ND < 5.0 ND < 5.0 ND < 5.0 ND < 5.0 ND < 5.0 ND < 5.0 Personant of the second of

Page 6 of 9

November 11, 2010

CET#: 10100256r Project: Quinnipiac University, Roof Alumni Hall

PA 8082 PCBs [EPA 8082] Units: m Client ID Rm 207 Wall B 1.5 CET ID AE52897 10/18/2010 5.0 Date Analyzed Dilution PCB-1016 ND < 1.3 ND < 1.3 PCB-1221 PCB-1232 ND < 1.3 PCB-1242 PCB-1248 PCB-1254 PCB-1254 PCB-1260 PCB-1268 TCMX (Surr 1) 50-150 DCB (Surr 2) 50-150 +	g/kg (Dry Wt) in Rm 207 Wall B 2.5in AE52898 10/14/2010 1.0 ND < 0.30 1.4 ND < 0.30 ND < 0.30 ND < 0.30 88 62	Rm 207 Wall B 4.5in AE52899 10/14/2010 1.0 ND < 0.30 76 62	Rm 207 Wall C 1.5in AE52900 10/14/2010 1.0 ND < 0.30 1.3 ND < 0.30 ND < 0.30 88 76
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EPA 8082 PCBs [EPA 8082] Units: mg/kg (Dry Wt)

PA 8082 PCBs [EPA	Rm 207 Wall C 2.5in	
Client ID CET ID Date Analyzed Dilution PCB-1016 PCB-1221 PCB-1232 PCB-1242 PCB-1248 PCB-1254 PCB-1260 PCB-1268 TCMX (Surr 1) 50-150 DCB (Surr 2) 50-150	AE52901 10/15/2010 2.0 ND < 0.50 ND < 0.50	AE52902 10/15/2010 1.0 ND < 0.30 ND < 0.30

⁺Surrogate diluted out.

Questions related to this report should be directed to David Ditta, Timothy Fusco, or Robert Blake at 203-377-9984.

Sincerely,

Laboratory Director

Page 7 of 9

Project#: 32510

CET#: 10100256r Project: Quinnipiac University, Roof Alumni Hall

Report Comments:

1. ND is None Detected at the specified detection limit.

- 2. All analyses were performed in house unless a Reference Laboratory is listed.
- 3. Samples will be disposed of 30 days after the report date.
- 4. Sample Result Flags:
 - E The result is estimated, above the calibration range.
 - H The surrogate recovery is above the control limits.
 - L The surrogate recovery is below the control limits.
 - B The compound was detected in the laboratory blank.
 - P The Relative Percent Difference (RPD) of dual column analyses exceeds 40%.
 - D The RPD between the sample and the sample duplicate is high. Sample homogeneity may be a problem.
- 5. All results met standard operating procedures unless indicated by a data qualifier next to a sample result, or a narration in the QC report.

November 11, 2010

Revision: Original dated 10/19/2010; added data for samples AE52873-AE52875 per client request.

Project#: 32510 CET#: 10100256r

Project: Quinnipiac University, Roof Alumni Hall



Facility Support Services, LLC

Environmental & Safety Consulting Engineers Medical Waste Disposal & Management 2685 State Street Hamden, CT 06517

Telephone: (203) 288-1281

Fax: (203) 248-4409

FACSIMILE COVER SHEET

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Date: 11-2-10 Number of Pages (including this cover sheet): 3
To: CET
Fax Number: 377 - 9952 Telephone Number:
From: Steven Duziols.
From: Steven 1009102
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Flow Review Please Comment Please Reply
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This transmission is CONFIDENTIAL and intended only to be received by the above individual(s) and may contain legally sensitive information. If you receive this facsimile in error, please notify the sender as soon as possible. Thank you.
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Project#: 32510
Project: Quinnipiac University, Roof Alumni Hall



80 Lupes Drive Stratford, CT 06615 Tel: (203) 377-9984 Fax: (203) 377-9952 e-mail: cet1@cetlabs.com

Client:

Mr. Steve Daniels Facility Support Services 2685 State Street Hamden, CT 06517

Analytical Report

CET # 10100289

Report Date: October 19, 2010 Client Project: QU, Alumni Hall, Student Center Client Project #: 32510



Project#: 32510 CET#: 10100289

Project: QU, Alumni Hall, Student Center

SAMPLE SUMMARY:

This report contains analytical data associated with the following samples only:

CETID	Client Sample ID	Matrix	Collection Date	Collection Time	Receipt Date
AE52997	Brick A 1.5in	Solid	10/12/2010		10/13/2010
AE52998	Brick A 2.5in	Solid	10/12/2010		10/13/2010
AE52999	Brick B 4.5in	Solid	10/12/2010		10/13/2010
AE53000	Ladys 1st Floor Caul	Solid	10/12/2010	3	10/13/2010
AE53001	Ladys 2nd Floor Caul	Solid	10/12/2010		10/13/2010
AE53002	Mens 1st Floor Caulk	Solid	10/12/2010	Ž.	10/13/2010
AE53003	Mens 2nd Floor Caulk	Solid	10/12/2010		10/13/2010
AE53004	Soil 1 3-6in	Solid	10/12/2010		10/13/2010
AE53005	Soil 2 3-6in	Solid	10/12/2010		10/13/2010
AE53006	Soil 3 3-6in	Solid	10/12/2010		10/13/2010
AE53007	Soil S4 16-18in	Solid	10/12/2010		10/13/2010
AE53008	Soil S5 3-6in	Solid	10/12/2010		10/13/2010
AE53009	Soil S6 3-6in	Solid	10/12/2010	į.	10/13/2010
AE53010	Soil S7 3-6in	Solid	10/12/2010		10/13/2010
AE53011	Soil S8 3-6in	Solid	10/12/2010		10/13/2010
AE53012	Soil S9 3-6in	Solid	10/12/2010		10/13/2010
AE53013	Soil S10 3-6in	Solid	10/12/2010		10/13/2010
AE53014	Soil S11 3-6in	Solid	10/12/2010		10/13/2010
AE53015	Soil S12 10-18in	Solid	10/12/2010		10/13/2010
AE53016	Door Caulking 01	Solid	10/12/2010		10/13/2010
AE53017	Wood Substrate 01	Solid	10/12/2010		10/13/2010
AE53018	Wood Substrate 02	Solid	10/12/2010		10/13/2010
AE53019	Wood Substrate 03	Solid	10/12/2010		10/13/2010
AE53020	Water From Vacuum.	Water	10/12/2010		10/13/2010
AE53021	Decon Water	Water	10/12/2010		10/13/2010
AE53022	Stech Pain Beam 01	Solid	10/12/2010		10/13/2010

Sample temperature upon receipt was 3.7 degrees C

PREP ANALYSIS:

Acid Digestion [EPA 3050B]

Client ID	Stech Pain Beam 01
CET ID	AE53022
Date Analyzed	10/14/2010

Liquid-Liquid Ext. PCBs & Pest. [EPA 3510C]

Client ID	Water From Vacuum.	Decon Water
CET ID	AE53020	AE53021
Date Analyzed	10/13/2010	10/13/2010

Project#: 32510

CET#: 10100289

Project: QU, Alumni Hall, Student Center

Soxhlet Extraction [EPA 3540C]

Client ID	Brick A 1.5in	Brick A 2.5in	Brick B 4.5in	Ladys 1st Floor Caul
CET ID	AE52997	AE52998	AE52999	AE53000
Date Analyzed	10/14/2010	10/14/2010	10/14/2010	10/14/2010

Soxhlet Extraction [EPA 3540C]

JUNITICE LINUAG	tion [Billot ivo]			
Client ID	Ladys 2nd Floor Caul	Mens 1st Floor Caulk	Mens 2nd Floor Caulk	Soil 1 3-6in
CET ID	AE53001	AE53002	AE53003	AE53004
Date Analyzed	10/14/2010	10/14/2010	10/14/2010	10/14/2010

Soxhlet Extraction [EPA 3540C]

JUNIIICE LINGIA	LI ULL				
Client ID	Soil	2 3-6in	Soil 3 3-6in	Soil S4 16-18in	Soil S5 3-6in
CET ID	AE53	005	AE53006	AE53007	AE53008
Date Analyzed	10/14	1/2010	10/14/2010	10/14/2010	10/14/2010

Soxhlet Extraction [EPA 3540C]

Client ID	Soil S6 3-6in	Soil S7 3-6in	Soil S8 3-6in	Soil S9 3-6in
CET ID	AE53009	AE53010	AE53011	AE53012
Date Analyzed	10/14/2010	10/14/2010	10/15/2010	10/15/2010

Soxblet Extraction [EPA 3540C]

Client ID	Soil S10 3-6in	Soil S11 3-6in	Soil \$12 10-18in	Door Caulking 01
CET ID	AE53013	AE53014	AE53015	AE53016
Date Analyzed	10/15/2010	10/15/2010	10/15/2010	10/15/2010

Soxhlet Extraction [EPA 3540C]

Client ID	Wood Substrate 01	Wood Substrate 02	Wood Substrate 03
CET ID	AE53017	AE53018	AE53019
Date Analyzed	10/15/2010	10/15/2010	10/15/2010

ANALYSIS:

Lead for Paint Chips [EPA 6010] Units: %

Client ID	Stech Pain Beam 01
CET ID	AE53022
Date Analyzed	10/14/2010
Lead for Paint Chips	28

Project#: 32510 CET#: 10100289

Project: QU, Alumni Hall, Student Center

Total Solids [EPA 160.3 mo] Units: percent

Lotal Conds	THE TOO! 0 1110	Cimto. Pero			
Client ID	Soil 1 3-6in	Soil 2 3-6in	Soil 3 3-6in	Soil S4 16- 18in	Soil S5 3-6in
CET ID Date Analyzed Total Solids	AE53004 10/14/2010 92	AE53005 10/14/2010 92	AE53006 10/14/2010 92	AE53007 10/14/2010 93	AE53008 10/14/2010 91

Total Solids IEPA 160.3 mol Units: percent

Total bonds	LILL LOUIS MICH	Carrent bear		
Client ID	Soil S6 3-6in	Soil S7 3-6in	Soil S8 3-6in	Soil S9 3-6in
CET ID	AE53009	AE53010	AE53011	AE53012
Date Analyzed	10/14/2010	10/14/2010	10/14/2010	10/14/2010
Total Solids	92	91	92	92

Total Solids [EPA 160.3 mo] Units: percent

Client ID	Soil S10 3-6in	Soil S11 3-6in	Soil S12 10-18in
CET ID	AE53013	AE53014	AE53015
Date Analyzed	10/14/2010	10/14/2010	10/14/2010
Total Solids	92	92	95

EPA 8082 PCBs [EPA 8082] Units: ug/1

Client ID	Water From Vacuum.	Decon Water
CET ID	AE53020	AE53021
Date Analyzed	10/13/2010	10/13/2010
Dilution	1.0	1.0
PCB-1016	ND < 0.50	ND < 0.50
PCB-1221	ND < 0.50	ND < 0.50
PCB-1232	ND < 0.50	ND < 0.50
PCB-1242	ND < 0.50	ND < 0.50
PCB-1248	ND < 0.50	ND < 0.50
PCB-1254	ND < 0.50	ND < 0.50
PCB-1260	ND < 0.50	ND < 0.50
PCB-1268	ND < 0.50	ND < 0.50
TCMX (Surr 1) 50-150	81	104
DCB (Surr 2) 50-150	57	87

Project: QU, Alumni Hall, Student Center

EPA 8082 PCBs [EPA 8082] Units: mg/kg (Dry Wt)

Client ID	Brick A 1.5in		Brick B 4.5in	Ladys 1st Floor Caul
	AE52997	AE52998	AE52999	AE53000
CET ID		10/15/2010	10/15/2010	10/15/2010
Date Analyzed	10/15/2010	10	2.0	10.0
Dilution	2.0	2.0		ND < 2.5
PCB-1016	ND < 0.50	ND < 0.50	ND < 0.50	ND < 2.5
PCB-1221	ND < 0.50	ND < 0.50	ND < 0.50	
PCB-1232	ND < 0.50	ND < 0.50	ND < 0.50	ND < 2.5
PCB-1242	ND < 0.50	ND < 0.50	ND < 0.50	ND < 2.5
	ND < 0.50	ND < 0.50	ND < 0.50	ND < 2.5
PCB-1248	1.5	ND < 0.50	ND < 0.50	ND < 2.5
PCB-1254		ND < 0.50	ND < 0.50	ND < 2.5
PCB-1260	ND < 0.50		ND < 0.50	ND < 2.5
PCB-1268	ND < 0.50	ND < 0.50		10 12.3
TCMX (Surr 1) 50-150	107	75	115	†
DCB (Surr 2) 50-150	70	70	80	+

EPA 8082 PCBs [EPA 8082] Units: mg/kg (Dry Wt)

	A 8082] Units: mg/k	Mens 1st Floor Caulk	Mens 2nd Floor Caulk	Soil 1 3-6in
Client ID		AE53002	AE53003	AE53004
CET ID	AE53001		10/15/2010	10/15/2010
Date Analyzed	10/15/2010	10/15/2010	5.0	1.0
Dilution	5.0	1.0	1.742	ND < 0.30
PCB-1016	ND < 1.3	ND < 0.30	ND < 1.3	ND < 0.30
PCB-1221	ND < 1.3	ND < 0.30	ND < 1.3	
PCB-1232	ND < 1.3	ND < 0.30	ND < 1.3	ND < 0.30
	ND < 1.3	ND < 0.30	ND < 1.3	ND < 0.30
PCB-1242	ND < 1.3	ND < 0.30	ND < 1.3	ND < 0.30
PCB-1248		ND < 0.30	ND < 1.3	ND < 0.30
PCB-1254	ND < 1.3	ND < 0.30	ND < 1.3	ND < 0.30
PCB-1260	ND < 1.3		ND < 1.3	ND < 0.30
PCB-1268	ND < 1.3	ND < 0.30		107
TCMX (Surr 1) 50-150	+	92	+	
DCB (Surr 2) 50-150	+	51	1+	70

PA 8082 PCBs [EP	Soil 2 3-6in	Soil 3 3-6in	Soil S4 16-18in	Soil S5 3-6in
	AE53005	AE53006	AE53007	AE53008
CET ID	10/15/2010	10/15/2010	10/15/2010	10/15/2010
Date Analyzed	1.0	1.0	1.0	1.0
Dilution	ND < 0.30	ND < 0.30	ND < 0.30	ND < 0.30
PCB-1016	ND < 0.30	ND < 0.30	ND < 0.30	ND < 0.30
PCB-1221	ND < 0.30	ND < 0.30	ND < 0.30	ND < 0.30
PCB-1232	ND < 0.30	ND < 0.30	ND < 0.30	ND < 0.30
PCB-1242	ND < 0.30	ND < 0.30	ND < 0.30	ND < 0.30
PCB-1248	ND < 0.30	ND < 0.30	1.1	ND < 0.30
PCB-1254	ND < 0.30	ND < 0.30	ND < 0.30	ND < 0.30
PCB-1260	ND < 0.30	ND < 0.30	ND < 0.30	ND < 0.30
PCB-1268		65	114	117
TCMX (Surr 1) 50-150	116	69	76	76
DCB (Surr 2) 50-150	72	09	170	

October 19, 2010

EPA 8082 PCBs [EPA 8082] Units: mg/kg (Dry Wt)

PA 8082 PCBs [EP.	C 7 C6 2 6in	Soil \$7.3-6in	Soil S8 3-6in	Soil S9 3-6in
Client ID CET ID Date Analyzed Dilution PCB-1016 PCB-1221 PCB-1232 PCB-1242 PCB-1248 PCB-1254 PCB-1260 PCB-1268 TCMX (Surr 1) 50-150	Soil S6 3-6in AE53009 10/15/2010 1.0 ND < 0.30 118	Soil S7 3-6in AE53010 10/15/2010 1.0 ND < 0.30 116 77	Soil S8 3-6m AE53011 10/17/2010 1.0 ND < 0.30 ND < 0.30	AE53012 10/17/2010 1.0 ND < 0.30 ND < 0.30

EPA 8082 PCBs [EPA 8082] Units: mg/kg (Dry Wt)

PA 8082 PCBs [EP.	Soil S10 3-6in	Soil S11 3-6in	Soil S12 10-18in	Door Caulking 01
Client ID CET ID Date Analyzed Dilution PCB-1016 PCB-1221 PCB-1232 PCB-1242 PCB-1248 PCB-1254 PCB-1260 PCB-1268 TCMX (Surr 1) 50-150 DCB (Surr 2) 50-150	AE53013 10/17/2010 1.0 ND < 0.30	AE53014 10/17/2010 1.0 ND < 0.30 ND < 0.30 Second of the second of the	AE53015 10/17/2010 1.0 ND < 0.30 ND < 0.30 ND < 0.30 ND < 0.30 ND < 0.30 ND < 0.30 O.44 ND < 0.30 ND < 0.30 O.44 ND < 0.30 O.30 O.44 O.30 O.30 O.44 O.30 O.30 O.44 O.30 O	AE53016 10/17/2010 5.0 ND < 1.3 ND < 1.3 ND < 1.3 ND < 1.3 ND < 1.3 ND < 1.3 + +

PA 8082 PCBs [EPA	Wood Substrate 01	Wood Substrate 02	Wood Substrate 03
Client ID CET ID Date Analyzed Dilution PCB-1016 PCB-1221 PCB-1232 PCB-1242 PCB-1248 PCB-1254 PCB-1260 PCB-1268 TCMX (Surr 1) 50-150 DCB (Surr 2) 50-150	Wood Substrate 01 AE53017 10/19/2010 3.3 ND < 0.90 A.9 ND < 0.90	AE53018 10/19/2010 3.3 ND < 0.90 ND < 0.90 ND < 0.90 ND < 0.90 A.2 ND < 0.90 ND < 0.90 ND < 0.90 ND < 0.90 A.2 ND < 0.90 ND < 0.90 A.2 A.2 A.3	AE53019 10/19/2010 1.0 ND < 0.30 ND < 0.30 ND < 0.30 ND < 0.30 ND < 0.30 1.3 1.4 ND < 0.30 ND < 0.30 OD < 0.30

CET#: 10100289 Project: QU, Alumni Hall, Student Center

EPA 8082 PCB Dup Result [EPA 8082] Units: mg/kg (Dry Wt)

LIA 0002 I CD	Dup recoure
Client ID	Soil 1 3-6in
CET ID	AE53004
Date Analyzed	10/15/2010
Dilution	1.0
PCB-1016	ND < 0.30
PCB-1221	ND < 0.30
PCB-1232	ND < 0.30
PCB-1242	ND < 0.30
PCB-1248	ND < 0.30
PCB-1254	ND < 0.30
PCB-1260	ND < 0.30
PCB-1268	ND < 0.30
TCMX (Surr 1)	120
DCB (Surr 2)	81

Assumed 100% Total Solids for samples AE52997-AE53003, AE53016-AE53019 and AE53022.

Questions related to this report should be directed to David Ditta, Timothy Fusco, or Robert Blake at 203-377-9984.

Sincerely,

David Ditta Laboratory Director

Report Comments:

- 1. ND is None Detected at the specified detection limit.
- 2. All analyses were performed in house unless a Reference Laboratory is listed.
- 3. Samples will be disposed of 30 days after the report date.
- 4. Sample Result Flags:
 - E The result is estimated, above the calibration range.
 - H The surrogate recovery is above the control limits.
 - L The surrogate recovery is below the control limits.
 - B The compound was detected in the laboratory blank.
 - P The Relative Percent Difference (RPD) of dual column analyses exceeds 40%.
 - D The RPD between the sample and the sample duplicate is high. Sample homogeneity may be a problem.
- 5. All results met standard operating procedures unless indicated by a data qualifier next to a sample result, or a narration in the QC report.

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Project#: 32510 CET#: 10100289 Project: QU, Alumni Hall, Student Center

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Project: QU, Alumni Hall, Student Center

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80 Lupes Drive Stratford, CT 06615 Tel: (203) 377-9984 Fax: (203) 377-9952 e-mail: cet1@cetlabs.com

Client: Mr. Steve Daniels

Facility Support Services 2685 State Street Hamden, CT 06517

Analytical Report

CET # 10110573

Report Date: November 26, 2010

Client Project: QU Alumni Hall Student Center, Rm 211



CET#: 10110573 Project: QU Alumni Hall Student Center, Rm 211

SAMPLE SUMMARY:

This report contains analytical data associated with the following samples only:

sains analytical data associated with	the lone g
This report contains analytical data associated with	on Date Collection Time Receipt Date
	11/19/2010
CETID Client Sample 1D 11/18/	2010
AE57017 B001 0.0-0.5in Solid 11715	

Sample temperature upon receipt was 1.9 degrees C

PREP ANALYSIS:

Soxhlet Extraction [EPA 3540C]

Soxhlet Extrac	B001 0.0-0.5in
Client ID	B001 0.0-0.5m
CET ID	AE57017 11/22/2010
Date Analyzed	11/22/2010

ANALYSIS:

Total Solids [EPA 160.3 mo] Units: percent

L Boot 0.0 0 5in
B001 0.0-0.5m
AE57017 11/19/2010
100

PA 8082 PCBs [EP.	B001 0.0-0.5in
Client ID	AE57017
ET ID	11/23/2010
Date Analyzed	2.0
Dilution	ND < 0.
PCB-1016	ND < 0.50
PCB-1221	ND < 0.50
PCB-1232	ND < 0.50
PCB-1242	ND < 0.50
PCB-1248	ND < 0.50
PCB-1254	ND < 0.50
PCB-1260	ND < 0.50
PCB-1268	
TCMX (Surr 1) 50-150 DCB (Surr 2) 50-150	112

CET#: 10110573

Project: QU Alumni Hall Student Center, Rm 211

Questions related to this report should be directed to David Ditta, Timothy Fusco, or Robert Blake at 203-377-9984.

Sincerely, 山上上

David Ditta

Laboratory Director

Report Comments:

- 1. ND is None Detected at the specified detection limit.
- 2. All analyses were performed in house unless a Reference Laboratory is listed.
- 3. Samples will be disposed of 30 days after the report date.
- 4. Sample Result Flags:
 - E The result is estimated, above the calibration range.
 - H The surrogate recovery is above the control limits.
 - L The surrogate recovery is below the control limits.
 - B The compound was detected in the laboratory blank.
 - P The Relative Percent Difference (RPD) of dual column analyses exceeds 40%.
 - D The RPD between the sample and the sample duplicate is high. Sample homogeneity may be a problem.
- 5. All results met standard operating procedures unless indicated by a data qualifier next to a sample result, or a narration in the QC report.

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80 Lupes Drivo Tel: (203) 377-9984 Stratford, CT 06615 Fax: (203) 377-9952 e-mail: cel@cellabs.com	20	OTAL # OF CO
Sample ID Date/Time	### Page 1	01
01-81-11 1,5.00	X X Y Y Y	
PRESERVATIVE (CI-HCI. N-HND, S-H,SO., Na-NaOH, C=Cool, O-Other)	O-Other)	
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	6	SHEET
Fax#	Fax #	REV. S/8/06

. Complete Environmental Testing, Inc.



80 Lupes Drive Stratford, CT 06615

Tel: (203) 377-9984 Fax: (203) 377-9952 e-mail: cet1@cetlabs.com

Client:

Mr. Steve Daniels Facility Support Services 2685 State Street Hamden, CT 06517

Analytical Report

CET # 10110067

Report Date: November 4, 2010 Client Project: QU Student/Alumni Hall Client Project #: 32510



Project#: 32510 CET#: 10110067

Project: QU Student/Alumni Hall

SAMPLE SUMMARY:

This report contains analytical data associated with the following samples only:

		1	Collection Date	Collection Time	Receipt Date
CETID	Client Sample ID	Matrix		Comme	11/02/0210
AE55124	Roof Tar 01	Solid	10/12/2010		11/02/0210
	Roof Tar 02	Solid	10/12/2010		11/02/0210
AE55125		Solid	10/12/2010	1	
AE55126	Roof Tar 03	Solid	10/30/2010		11/02/0210
AE55127	P1 103010		10/30/2010	1	11/02/0210
AE55128	P2 103010	Solid			11/02/0210
AE55129	P3 103010	Solid	10/30/2010		11/02/0210
AE55130	P4 103010	Solid	10/30/2010		11/02/0210
		Solid	10/30/2010		11/02/0210
AE55131	P5 103010	Solid	10/30/2010	75	11/02/0210
AE55132	P6 103010	Solid	10/30/200		

Sample temperature upon receipt was n/a.

PREP ANALYSIS:

Soxhlet Extraction [EPA 3540C]

Soxhlet Extrac	tion [EPA 35	540C]	- cm 02	P1 103010	P2 103010
Client ID	Roof Tar 01	Roof Tar 02	Roof Tar 03	AE55127	AE55128
CET ID	AE55124 11/2/2010	AE55125 11/2/2010	AE55126 11/2/2010	11/2/2010	11/2/2010
Date Analyzed	11/2/2010	11/2/2011			

Soxhlet Extraction [EPA 3540C]

Soxhlet Extrac	tion Era)340Cj	T 75 402010	P6 103010
Client ID	P3 103010	P4 103010	P5 103010	
		AE55130	AE55131	AE55132
CET ID	11/2/2010	11/2/2010	11/2/2010	11/2/2010
Date Analyzed	11/2/2010	11/2/2015		

ANALYSIS:

PA 8082 PCBs [EP.	Destar 01	Roof Tar 02	Roof Tar 03	P1 103010	P2 103010
Client ID CET ID Date Analyzed Dilution PCB-1016 PCB-1221 PCB-1232 PCB-1242 PCB-1248 PCB-1254 PCB-1260 PCB-1268 TCMX (Surr 1) 50-150 DCB (Surr 2) 50-150	Roof Tar 01 AE55124 11/3/2010 4.0 ND < 1.0 AE55124 AU AU AU AU AU AU AU AU AU A	AE55125 11/3/2010 4.0 ND < 1.0 ND < 1.0	AE55126 11/3/2010 6.7 ND < 1.7 ND < 1.7	AE55127 11/4/2010 8.0 ND < 2.0 ND < 2.0 ND < 2.0 ND < 2.0 6.2 7.5 ND < 2.0 ND < 2.0 + +	AE55128 11/4/2010 10.0 ND < 2.5 ND < 2.5 ND < 2.5 12 14 ND < 2.5 ND < 2.5 + +

Project#: 32510 CET#: 10110067

Project: QU Student/Alumni Hall

EPA 8082 PCBs [EPA 8082] Units: mg/kg (Dry Wt)

PA 8082 PCBs [EPA Client ID CET ID Date Analyzed Dilution PCB-1016 PCB-1221 PCB-1232 PCB-1242 PCB-1248 PCB-1254 PCB-1260 PCB-1268 TCMX (Surr 1) 50-150	P3 103010 AE55129 11/4/2010 13.0 ND < 3.3 10 12 ND < 3.3 ND < 3.3 +	P4 103010 AE55130 11/4/2010 15.0 ND < 3.8 + +	P5 103010 AE55131 11/4/2010 2.0 ND < 0.50 O < 0.50 ND < 0.50 O < 0.50	P6 103010 AE55132 11/4/2010 1.0 ND < 0.30 101
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⁺Surrogate diluted out.

Questions related to this report should be directed to David Ditta, Timothy Fusco, or Robert Blake at 203-377-9984.

Sincerely,

Laboratory Director

- Report Comments: 1. ND is None Detected at the specified detection limit.
 - 2. All analyses were performed in house unless a Reference Laboratory is listed.
 - 3. Samples will be disposed of 30 days after the report date.
 - 4. Sample Result Flags:
 - E The result is estimated, above the calibration range.
 - H The surrogate recovery is above the control limits.
 - L The surrogate recovery is below the control limits.
 - B The compound was detected in the laboratory blank.
 - P The Relative Percent Difference (RPD) of dual column analyses exceeds 40%.
 - D The RPD between the sample and the sample duplicate is high. Sample homogeneity may be a problem.
 - 5. All results met standard operating procedures unless indicated by a data qualifier next to a sample result, or a narration in the QC report.

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Complete Environmental Testing, Inc.

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Complete Environmental Testing, Inc.

APPENDIX II TECHNICAL SPECIFICATIONS REPORT

PCB Removal Technical Specification Amended Pages 2, 36, 41 & 42

Facility Support Services, LLC

Environmental & Safety/Health Consulting

PCB BUILDING MATERIALS ABATEMENT SPECIFICATIONS PHASE I

QUINNIPIAC UNIVERSITY CARL HANSEN STUDENT CENTER 275 MOUNT CARMEL AVENUE HAMDEN, CT 06518

Prepared For:

Quinnipiac University 275 Mount Carmel Avenue Hamden, Connecticut 06518

Prepared By:

Facility Support Services, LLC 2685 State Street Hamden, Connecticut 06517

December 27, 2010 Rev. February 24, 2011 FSS Project Number: 32510

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Table 3	Listing of PCB Bulk Product Remediation Waste - Soil and Gravel
Table 4	Listing of Connecticut Regulated (<50 mg/kg) PCB Materials Waste

FIGURES

Figure 1:	Bulk Product Locations, First Floor
Figure 2:	Bulk Product Locations, Second Floor
Figure 3:	CMU Wall Demolition Sequence

Figure 4: Asphalt, Soil and Gravel Removal Locations

Figure 5: Connecticut Regulated (PCB < 50 mg/kg) Material Locations

PCB Removal Technical Specification Amended Pages 2, 36, 41 & 42

Facility Support Services, LLC

Environmental & Safety/Health Consulting

PCB BUILDING MATERIALS ABATEMENT SPECIFICATIONS PHASE I

QUINNIPIAC UNIVERSITY CARL HANSEN STUDENT CENTER 275 MOUNT CARMEL AVENUE HAMDEN, CT 06518

Prepared For:

Quinnipiac University 275 Mount Carmel Avenue Hamden, Connecticut 06518

Prepared By:

Facility Support Services, LLC 2685 State Street Hamden, Connecticut 06517

December 27, 2010 Rev. February 24, 2011 FSS Project Number: 32510

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PCB REMEDIATION TECHNICAL SPECIFICATIONS

1 PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 specification sections, apply to this section.
- B. Reference is made to the Self-Implementing On-Site Cleanup and Disposal Plan for PCB Caulking Removal as prepared by Facility Support Services, LLC dated December 23, 2010.
- C. PCB Remediation work will be carried out simultaneously with the abatement of asbestos containing materials. In addition to the requirements of this section all work will be carried out in accordance with requirements of the Facility Support Services, LLC, Asbestos Abatement Technical Specification dated November 8, 2010.

1.2 GENERAL REQUIREMENTS

- A. The Remediation Contractor shall furnish all labor, materials, facilities, equipment, installation services, employee training, notifications, permits, licenses, certifications, agreements and incidentals necessary to perform the specified work. Work shall be performed in accordance with the contract documents, the latest regulations from the Occupational Safety and Health Administration (OSHA), the United States Environmental Protection Agency (USEPA), and all other applicable federal, state and local agencies. Whenever the requirements of the above references conflict or overlap, the more stringent provision shall apply.
- B. All project personnel engaged in the work covered under this section shall be trained in accordance with OSHA Regulations 29 CFR 1910.1000 and 29 CFR 1910.1200. It should also be noted that work associated with PCB removal may also involve asbestos-containing materials during demolition and removal activities specified herein and Remediation Contractor shall perform required exposure assessment for asbestos in accordance with 29 CFR 1926.1101 for asbestos.
- C. The Remediation Contractor shall provide a Project Health and Safety Officer having a minimum of eight (8) hours of supervisor training in hazardous waste site operations in accordance with the requirements of 29 CFR 1910. The supervisor must be on site at all times during abatement work.
- D. This section specifies the procedures for removal of existing materials containing polychlorinated biphenyls (PCB), equal to or greater than (≥)50 parts per million (mg/kg), in the form of window system caulking and glazing compounds, expansion joint caulking, and the disposal of the removed materials as PCB Bulk Product

Waste. This section also specifies the procedures for removal of Bulk PCB Remediation Waste including adjacent masonry, steel, and soil; and the subsequent cleaning of all adjacent surfaces upon completion of work.

- E. The quantities given in these specifications are provided to establish the order of magnitude of the abatement project. Actual quantities may vary. The Contractor is responsible for verification of all quantities of PCB containing materials scheduled for removal. This verification shall include an on-site walk-through inspection of the work area.
- F. The Remediation Contractor shall disclose to all of his workers, supervisory personnel, subcontractors and consultants who will be at job site of the seriousness of the hazard of working with PCB-containing materials and of proper work procedures which must be followed.
- G. The PCB containing materials scheduled for removal during this phase may also be Asbestos Containing Materials (ACMs) and must be disposed of as such. Where applicable the waste must be delivered to a landfill that accepts both Toxic Substance Control Act (TSCA) Regulated PCB Bulk Product and/or Remediation Waste and ACMs.
- H. Where in the performance of the work, workers, supervisory personnel, subcontractors, or consultants may encounter, disturb or otherwise function in the immediate vicinity of polychlorinated biphenyls (PCB) containing materials, appropriate, continuous measures as necessary to protect all workers from the hazard of exposure shall be taken. Such measures shall include the procedures and methods described herein, regulations of the U.S. Occupational Safety & Health Administration (OSHA), U.S. Environmental Protection Agency (USEPA), and local requirements as applicable.
- I. <u>Project Scope Locations and Work Statement</u>: The project site is the "Area of Work" renovation section, as shown on Figures 1 and 2 located at the Student Center/Alumni Hall, 275 Mount Carmel Avenue, in Hamden, CT. The proposed removal and disposal activities to be performed by Remediation Contractor shall include the following:
 - 1. Site preparation and controls to facilitate remediation of PCBs.
 - Health and Safety compliance in accordance with Occupational Safety and Health Administration (OSHA) requirements.
 - Recordkeeping and distribution as required in accordance with 40 CFR 761 Parts J and K.
 - PCB Bulk Product Waste Removal.

PCB Bulk Product Waste Removal

- PCB-01 Remove existing exterior window caulking at jamb, lintel and sill locations from sill to head at all masonry openings for disposal as PCB Bulk Product Waste.
- PCB-02 Remove existing window sashes with exterior glazing and dispose of entire sash as PCB Bulk Product Waste. (All window sashes are metal)
- PCB-03 Remove existing interior caulking at jamb, lintel and sill locations from sill to head at all window masonry openings for disposal as PCB Bulk Product Waste.
- PCB-04 Remove existing window sashes with interior glazing and dispose of entire sash as PCB Bulk Product Waste. (All window sashes are metal.)
- PCB-05 Remove existing exterior door caulking at jamb and lintel locations at all masonry openings for disposal as PCB Bulk Product Waste.
- PCB-06 Remove existing interior/exterior building joint caulking at expansion joint locations for disposal as PCB Bulk Product Waste.

PCB Remediation Waste Removal

- PCB-07 Remove existing painted concrete block for all locations where a wall will be demolished for disposal as Bulk PCB Remediation Waste ≥ 50 mg/kg. (Note: The paint has been determined to have a PCB concentration < 50 mg/kg; however, the block to be removed will be managed as Bulk PCB Remediation Waste ≥ 50 mg/kg for logistical reasons.)
- PCB-08 For walls to remain, remove existing interior porous concrete blocks at building expansion joints and window masonry opening jambs from sill to head from window opening. Individual blocks shall be removed in their entirety from location of caulk joint for disposal as Bulk PCB Remediation Waste ≥ 50 mg/kg.
- PCB-09 For walls to remain, remove existing interior and exterior brick veneer at building expansion joints and window and door masonry opening jambs from sill to head at least 8.0 inches from opening. Brick shall be removed in a vertical line at closest vertical mortar joint cutting whole bricks as necessary and removed in their entirety from location of caulk joint for disposal as Bulk PCB Remediation Waste ≥ 50 mg/kg.
- PCB-10 Remove entire existing wood window sills adjacent to PCB Bulk Product caulk joints for disposal as Bulk PCB Remediation Waste ≥ 50 mg/kg.
- PCB-11 Remove PCB contaminated asphalt paving from designated locations to full depth of material for disposal as Bulk PCB Remediation Waste ≥ 50 mg/kg out to at least 2 feet from source materials.

PCB-12 Remove PCB contaminated soil and gravel from beneath source locations to depths of at least 2.0 feet below grade and out at least 2.0 feet laterally beyond each source location for disposal as Bulk PCB Remediation Waste ≥50 mg/kg.

5. Connecticut Regulated Materials

In accordance with State of Connecticut statutes, caulking or other building materials containing PCBs <50 mg/kg but ≥ 1 mg/kg are regulated and may require remediation. These materials include roofing tar, roofing caulk, window caulk, window glazing and door caulk, which are products that were used in the original 1966 portion of the subject structure and meet the definition of "excluded products" as defined in 40 CFR part 761.3. According to Quinnipiac University these products were manufactured in or prior to 1966 and installed during the original construction, and the PCB concentrations detected are not the result of dilution. These materials, which possess concentrations of PCB ≥ 1 mg/kg but less than 50 mg/kg, will be removed and disposed of as PCB Remediation Waste.

1.3 CONTRACTOR QUALIFICATIONS

- A. All bidders shall submit a record of prior experience on PCB abatement projects, listing all completed jobs in the past 3 years, with projects of similar size and scope. The Contractor shall list the experience and training of the site supervisor and all on-site workers. The information that should be included is as follows:
 - 1. Project Name and Address
 - Owner's Name and Address
 - 3. Consultant
 - 4. Contract Amount
 - Start Date and Completion Date
 - 6. Extras and Change Orders
- B. The Contractor selected <u>must</u> appear on the approved list of Asbestos Abatement Contractors on file at the State of Connecticut Department of Public Health (CTDPH). <u>Only State-certified asbestos abatement supervisors and workers shall perform asbestos abatement work activities.</u>
- C. The Contractor must utilize only individuals that have obtained 40-Hour Hazardous Waste Operations & Emergency Response training to perform this work in addition to all other required training outlined in these specifications.
- D. Submit a written statement regarding whether the Contractor has ever been found out-of-compliance with federal or state asbestos regulations pertaining to worker protection, removal, transport, or disposal.

- E. The Contractor shall obtain and pay for all required permits, and prepare and file all original and amended local, state, and EPA pre-notification forms immediately following award of the work.
- F. The Contractor shall conduct personal exposure air monitoring for airborne fibers as prescribed by OSHA during the project performance.
- G. The Owner reserves the right to award this Contract to the Contractor who best meets all contractor qualifications and Owner's interests.

1.4 CONTRACTORS USE OF SITE AND PREMISES

A. Limit use of site and premises as follows:

Owner occupancy.

Work by Owner.

Use of site and premises by public.

- B. Coordinate use of the premises, including use of restroom facilities and utilities under direction of Owner.
- Assume full responsibility for protection and safekeeping of products under this Contract.

1.5 WORK SEQUENCE

- A. Work must be performed to accommodate Owner's requirements and work by other trades. Coordinate abatement schedule and operations with the Owner (Quinnipiac University)/General Contractor (O & G Industries, Inc.) /Construction Manager (Pegasus Group)/Consultant (Facility Support Services, LLC). Re-occupancy by owner and other trades shall occur following completion of work by the Contractor and successful air clearance sampling by the Consultant.
- B. The Owner may occupy portions of the building for their normal activities during the Work. The Contractor is responsible for creating a plan to accommodate Owner occupancy needs and remaining construction/renovation work. The work area must be isolated and separated from the occupied portion of the building by a solid plywood barrier with PCB warning signs posted on the occupied side.

1.6 OWNER'S OPERATIONS

- Schedule the Work to accommodate this requirement.
- B. Maintain means of egress.
- C. Coordinate Work with the Owner and the Fire Marshall.
- D. Maintain the fire alarm and fire detection systems at all times when the building is occupied during construction.
- E. Maintain a permanent means of egress during construction. Provide and maintain a temporary means of egress as required by the Fire Marshall.

1.7 CLOSEOUT AND PUNCH LIST

- A. The Contractor shall carefully check his/her own work and that of any Subcontractor as the work is being performed. Unsatisfactory work shall be corrected immediately.
- B. When the Contractor determines that he is substantially complete, that is, has less than one percent of his Contract remaining to be completed, he shall prepare for submission to the Consultant, a list of items to be completed or corrected. The failure to include any items on such list does not alter the responsibility of the Contractor to complete all work in accordance with the Contract Documents.
- C. Upon receipt of the Contractor's list of items to be completed or corrected, the Consultant will promptly make a thorough inspection and prepare a "punch list" setting forth in accurate detail any items on the Contractor's list and any additional items that are not acceptable.
- D. When the "punch list" has been prepared, the Consultant will arrange a meeting with the Contractor to identify and explain all punch list items and answer questions on the work that must be completed before final acceptance.
- E. The Contractor shall correct all "punch list" items or shall cause the correction of the "punch list" items within a time frame to be established when the "punch list" is made. The time frame for the completion of the "punch list" shall not exceed the completion date of the Contract. Should the "punch list" not be completed within the specified time frame, the Owner may invoke the rights given under the General Conditions.
- F. The Consultant shall not be expected to inspect any area more than once for the preparation of the "punch list" items. If, during an inspection, the Consultant

discovers five (5) or more deficient conditions, then the area shall be declared "Not Ready" for Inspection.

G. All inspections and sampling required for PCB asbestos abatement compliance will be performed by the Consultant.

1.8 CLEANING

Throughout the construction period, the Contractor shall maintain the building and site free of rubbish, debris, surplus materials, and other items not required for the Work. Remove such materials from the site daily to prevent accumulations. Remove all construction debris from work areas, and remove all hazardous waste and asbestos waste as required by the most current federal, state, and local regulations and the requirements of the specifications.

1.9 EMERGENCY CALLS

- A. The Contractor shall provide the Consultant and Owner with a telephone number where the Contractor or Contractor's Representative can be reached during non-working hours.
- B. At the direction of a duly authorized representative of the Owner, the Contractor may be required to dispatch all necessary personnel and equipment to any point on the work site to clear obstructions or make safe any conditions deemed necessary by the Owner or Consultant.

1.10 ADDITIONAL GENERAL REQUIREMENTS

- A. The Abatement Contractor shall employ an English-speaking competent Supervisor with at least three (3) years experience on projects of similar scope and magnitude who shall be responsible for all work involving asbestos abatement as described in the Specifications and defined in the applicable regulations, and have full-time daily supervision of the same. The Supervisor shall be the "Competent Person" as defined by OSHA regulations. The Contractor shall provide, on-site, at least one English-speaking foreman at all times when work is in progress. The supervisor and foreman must be thoroughly experienced in asbestos and PCB-containing materials removal work, knowledgeable of all applicable federal, state, and local regulations and capable of skillfully executing all work promptly, efficiently and in compliance with all requirements of these specifications. The Owner reserves the right to have any supervisory or foreman personnel removed from the project if they do not demonstrate the requisite qualifications.
- B. The Contractor shall allow work performed under this contract to be inspected, if required, by local, state, federal, and any other authorities having jurisdiction over such work. The Contractor shall immediately notify the Owner and

Consultant and shall maintain written evidence of such inspection for review by the Owner and Consultant.

- C. The Contractor shall incur the cost of all fines resulting from regulatory non-compliance as issued by federal, state, and local agencies. The Contractor shall incur the cost of all work requirements mandated by federal, state, and local agencies as a result of regulatory non-compliance or negligence.
- D. The Contractor shall immediately notify the Owner and Consultant of the delivery of all permits, licenses, certificates of inspection, approval or occupancy, etc., and any other such instruments required under codes by authorities having jurisdiction, regardless of to who issued, and shall cause them to be displayed to the Owner and Consultant for verification and recording.

1.11 REFERENCES

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only. Where a conflict or overlap among regulations and/or these specifications exist, the most stringent requirements shall apply.
 - 1. American National Standards Institute (ANSI)
 - a. ANSI.Z89.1 Personnel Protective Equipment Protective Headwear for Industrial Worker's Requirements (Latest Revision)
 - b. ANSI.Z87
 - 2. Code of Federal Regulations (CFR)
 - 29 CFR Subpart D Walking, Working Surfaces
 - 29 CFR 1910.120 Hazardous Waste Operations and Emergency Response (HAZWOPER).
 - c. 29 CFR 1910.134 Respiratory Protection Standard
 - d. 29 CFR 191 0.146 Permit-Required Confined Spaces
 - e. 29 CFR 1910.1000 Air Contaminants (Table Z-1)
 - f. 29 CFR 1910.1200 Hazard Communication
 - g. 29 CFR 1926.20 General Health and Safety Provisions
 - h. 29 CFR 1926.57 Ventilation
 - i. 29 CFR 1926.59 Hazard Communication Program
 - j. 29 CFR 1926.62 Lead Exposure in Construction
 - k. 29 CFR 1926.95 Criteria for Personal Protective Equipment
 - 29 CFR 1926, Subpart H -Materials Handling, Storage, Use, and Disposal
 - m. 29 CFR 1926, Subpart L Scaffolding
 - n. 29 CFR 1926, Subpart M -Fall Protection
 - o. 29 CFR 1926, Subpart X Ladders
 - p. 29 CFR 1926, Subpart Z Toxic and Hazardous Substances
 - q. 40 CFR 50.6 National Primary and Secondary Ambient Air Quality Standards for Particulate Matter
 - r. 40 CFR 260 Hazardous Waste Management System: General

- s. 40 CFR 261 Identification and Listing of Hazardous Waste
- t. 40 CFR 262 Standards Applicable to Generators of Hazardous Waste
- u. 40 CFR 263 Standards Applicable to Transporters of Hazardous Waste
- v. 40 CFR 264 Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
- w. 40 CFR 265 Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
- x. 40 CFR 268 Land Disposal Restrictions
- y. 40 CFR 700 Toxic Substances Control Act (TSCA)
- z. 40 CFR 761- PCBs Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions
- 49 CFR 105 Hazardous Materials Program Definitions and General Procedures
- ab. 49 CFR 171 General Information, Regulations and Definitions
- ac. 49 CFR 172 Hazardous Material Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements
- ad. 49 CFR 173 Shippers-General Requirements for Shipments and Packaging
- ae. 49 CFR 177 Carriage by Public Highway
- af. 49 CFR 176 Specifications for Packaging
- 3. National Institute for Occupational Safety and Health (NIOSH)
 - a. Publication Number 87-106 Respiratory Decision Logic
 - b. NIOSH /OSHA Booklet 3142 Lead in Construction
 - Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities (NIOSH Publication 85-115)
- 4. U.S. Environmental Protection Agency (USEPA), Toxic Substances Control Act (TSCA)
 - Polychlorinated Biphenyl (PCB) Site Revitalization Guidance Under the Toxic Substances Control Act
 - b. 40 CFR Part 761.50 Applicability (b) (1-8)
 - c. 40 CFR Part 761.61 PCB Remediation Waste
 - d. 40 CFR Part 761.62 PCB Bulk Product Waste
 - e. 40 CFR Part 761.79 Decontamination
- Center for Disease Control (CDC): Air Pollution and Respiratory Health.

1.12 DEFINITIONS

- A. The following definitions as used within this technical specification as well as references to specific sections of the Code of Federal Regulation section 40 CRF Part 761 are provided. Definitions are extracted in part from 40 CFR Part 761.3, for full definitions refer to the specified section of regulations.
 - 1. Bulk PCB Remediation Waste means waste containing PCBs as a result of a spill, release, or other unauthorized disposal, at the following concentrations: Materials disposed of prior to April 18, 1978, that are currently at concentrations ≥50 mg/kg PCBs, regardless of the concentration of the original spill; materials which are currently at any volume or concentration where the original source was ≥500 mg/kg PCBs beginning on April 18, 1978, or ≥50 mg/kg PCBs beginning on July 2, 1979; and materials which are currently at any concentration if the PCBs are spilled or released from a source not authorized for use under this part. PCB remediation waste means soil, rags, and other debris generated as a result of any PCB spill cleanup, as further defined in 40 CFR §761.3.
 - 2. <u>CERCLA</u> means the Comprehensive Environmental Response Compensation, and Liability Act (42 U.S.C. 9601-9657).
 - 3. Chemical waste landfill means a landfill at which protection against risk of injury to health or the environment from migration of PCBs to land, water, or the atmosphere is provided from PCBs and PCB Items deposited therein by locating, engineering, and operating the landfill as specified in §761.75.
 - 4. <u>Cleanup Site</u> means the areal extent of contamination and all suitable areas in very close proximity to the contamination necessary for implementation of a cleanup of PCB remediation waste, regardless of whether the site was intended for management of waste.
 - Containment means the enclosure within the building, which establishes a
 contaminated area and surrounds the location where PCB and/or other
 toxic or hazardous substance removal is taking place and establishes a
 Control Work Area.
 - Designated Facility means the off-site disposer or commercial storer of PCB
 waste designated on the manifest as the facility that will receive a
 manifested shipment of PCB waste.
 - 7. <u>Disposal</u> means intentionally or accidentally to discard, throw away, or otherwise complete or terminate the useful life of PCBs and PCB Items. Disposal includes spills, leaks, and other uncontrolled discharges of PCBs as well as actions related to containing, transporting, destroying, degrading, decontaminating, or confining PCBs and PCB Items.
 - 8. <u>DOT</u> means the United States Department of Transportation.
 - EPA identification number means the 12-digit number assigned to a facility by EPA upon notification of PCB waste activity under §761.205.
 - Excluded PCB products means PCB materials which appear at concentrations less than 50 mg/kg as defined in 40 CFR §761.3.

- 11. <u>Fixed Object:</u> means mechanical equipment, electrical equipment, fire detection systems, alarms, and all other fixed equipment, fixtures or other items, which cannot be removed from the work area.
- 12. Generator of PCB waste means any person whose act or process produces PCBs that are regulated for disposal under subpart D of 40 CFR Part 761, or whose act first causes PCBs or PCB Items to become subject to the disposal requirements of subpart D, or who has physical control over the PCBs when a decision is made that the use of the PCBs has been terminated and therefore is subject to the disposal requirements of subpart D. Unless another provision of 40 CFR Part 761 specifically requires a site-specific meaning, "generator of PCB waste" includes all of the sites of PCB waste generation owned or operated by the person who generates PCB waste.
- 13. <u>HEPA</u>: High Efficiency Particulate Air filtration efficiency of 99.97 percent down to 0.3 microns. Filtration provided on specialized vacuums and air filtration devices to trap particles.
- 14. <u>High occupancy area</u> means any area where PCB remediation waste has been disposed of on-site and where occupancy for any individual not wearing dermal and respiratory protection for a calendar year is: 840 hours or more (an average of 16.8 hours or more per week) for non-porous surfaces and 335 hours or more (an average of 6.7 hours or more per week) for bulk PCB remediation waste. Examples could include a residence, school, day care center, sleeping quarters, a single, or multiple occupancy 40 hours per week workstation, a school classroom, a cafeteria in an industrial facility, a control room, and a workstation at an assembly line.
- 15. <u>Incinerator</u> means an engineered device using controlled flame combustion to thermally degrade PCBs and PCB Items. Examples of devices used for incineration include rotary kilns, liquid injection incinerators, cement kilns, and high temperature boilers.
- 16. <u>Laboratory</u> means a facility that analyzes samples for PCBs and is unaffiliated with any entity whose activities involve PCBs.
- 17. <u>Liquid PCBs</u> means a homogenous flowable material containing PCBs and no more than 0.5 percent by weight non-dissolved material.
- 18. Low occupancy area means any area where PCB remediation waste has been disposed of on-site and where occupancy for any individual not wearing dermal and respiratory protection for a calendar year is: less than 840 hours (an average of 16.8 hours per week) for non-porous surfaces and less than 335 hours (an average of 6.7 hours per week) for bulk PCB remediation waste. Examples could include an electrical substation or a location in an industrial facility where a worker spends small amounts of time per week (such as an unoccupied area outside a building, an electrical equipment vault, or in the non-office space in a warehouse where occupancy is transitory).
- 19. Manifest means the shipping document EPA form 8700–22 and any continuation sheet attached to EPA form 8700–22, originated and signed by the generator of PCB waste in accordance with the instructions included with the form and subpart K of this part.

- 20. Mark means the descriptive name, instructions, cautions, or other information applied to PCBs and PCB Items, or other objects subject to these regulations.
- 21. Marked means the marking of PCB Items and PCB storage areas and transport vehicles by means of applying a legible mark by painting, fixation of an adhesive label, or by any other method that meets the requirements of these regulations.
- 22. <u>Municipal solid wastes</u> means garbage, refuse, sludges, wastes, and other discarded materials resulting from residential and non-industrial operations and activities, such as household activities, office functions, and commercial housekeeping wastes.
- 23. Non-liquid PCBs means materials containing PCBs that by visual inspection do not flow at room temperature (25°C or 77°F) or from which no liquid passes when a 100 g or 100 ml representative sample is placed in a mesh number 60 ±5 percent paint filter and allowed to drain at room temperature for 5 minutes.
- 24. Non-porous surface means a smooth, unpainted solid surface that limits penetration of liquid containing PCBs beyond the immediate surface. Examples are: smooth un-corroded metal, natural gas pipe with a thin porous coating originally applied to inhibit corrosion, smooth glass, smooth glazed ceramics, impermeable polished building stone such as marble or granite, and high density plastics such as polycarbonates and melamines that do not absorb organic solvents.
- 25. On site means within the boundaries of a contiguous property unit.
- 26. PCB and PCBs means any chemical substance that is limited to the biphenyl molecule that has been chlorinated to varying degrees or any combination of substances, which contains such substance. Refer to §761.1(b) for applicable concentrations of PCBs. PCB and PCBs as contained in PCB items are defined in §761.3. For any purposes under this part, inadvertently generated non-Aroclor PCBs are defined as the total PCBs calculated following division of the quantity of mono-chlorinated biphenyls by 50 and di-chlorinated biphenyls by 5.
- 27. PCB Article means any manufactured article, other than a PCB Container, that contains PCBs and whose surface(s) has been in direct contact with PCBs. "PCB Article" includes capacitors, transformers, electric motors, pumps, pipes and any other manufactured item (1) which is formed to a specific shape or design during manufacture, (2) which has end use function(s) dependent in whole or in part upon its shape or design during end use, and (3) which has either no change of chemical composition during its end use or only those changes of composition which have no commercial purpose separate from that of the PCB Article.
- 28. <u>PCB Article Container</u> means any package, can, bottle, bag, barrel, drum, tank, or other device used to contain PCB Articles or PCB Equipment, and whose surface(s) has not been in direct contact with PCBs.
- 29. PCB Bulk Product Waste means waste derived from manufactured products containing PCBs in a non-liquid state, at any concentration where the concentration at the time of designation for disposal is ≥50 mg/kg PCBs. PCB bulk product waste does not include PCBs or PCB Items regulated

- for disposal under §761.60(a) through (c), §761.61, §761.63, or §761.64. PCB bulk product waste is further defined in 40 CFR §761.3.
- 30. <u>PCB Capacitor</u> means any capacitor that contains ≥500 mg/kg PCB. Concentration assumptions applicable to capacitors appear under §761.2.
- 31. <u>PCB Container</u> means any package, can, bottle, bag, barrel, drum, tank, or other device that contains PCBs or PCB Articles and whose surface(s) has been in direct contact with PCBs.
- 32. <u>PCB-Contaminated</u> means a non-liquid material containing PCBs at concentrations ≥50 mg/kg but <500 mg/kg; a liquid material containing PCBs at concentrations ≥50 mg/kg but <500 mg/kg or where insufficient liquid material is available for analysis, a non-porous surface having a surface concentration >10 μg/100 cm² but < 100 μg/100 cm², measured by a standard wipe test as defined in §761.123.
- 33. PCB Equipment means any manufactured item, other than a PCB Container or a PCB Article Container, which contains a PCB Article or other PCB Equipment, and includes microwave ovens, electronic equipment, and fluorescent light ballasts and fixtures.
- 34. <u>PCB Item</u> means any PCB Article, PCB Article Container, PCB Container, PCB Equipment, or anything that deliberately or unintentionally contains or has as a part of it any PCB or PCBs.
- 35. <u>PCB waste(s)</u> means those PCBs and PCB Items that are subject to the disposal requirements of subpart D in 40 CFR Part 761.
- 36. Porous surface means any surface that allows PCBs to penetrate or pass into itself including, but not limited to, paint or coating on metal; corroded metal; fibrous glass or glass wool; unglazed ceramics; ceramics with a porous glaze; porous building stone such as sandstone, travertine, limestone, or coral rock; low-density plastics such as Styrofoam and low-density polyethylene; coated (varnished or painted) or uncoated wood; concrete or cement; plaster; plasterboard; wallboard; rubber; fiberboard; chipboard; asphalt; or tar paper. For purposes of cleaning and disposing of PCB remediation waste, porous surfaces have different requirements than non-porous surfaces.
- RCRA means the Resource Conservation and Recovery Act (40 U.S.C. 6901 et seq.).
- 38. Standard wipe sample means a sample collected for chemical extraction and analysis using the standard wipe test as defined in §761.123. Except as designated elsewhere in part 761, the minimum surface area to be sampled shall be 100 cm².
- 39. Storage for disposal means temporary storage of PCBs that have been designated for disposal.
- 40. <u>SW-846</u> means the document having the title "SW-846, Test Methods for Evaluating Solid Waste,"
- 41. <u>Totally enclosed manner</u> means any manner that will ensure no exposure of human beings or the environment to any concentration of PCBs.
- 42. Transfer facility means any transportation-related facility including loading docks, parking areas, and other similar areas where shipments of PCB waste are held during the normal course of transportation. Transport vehicles are not transfer facilities under this definition, unless they are used for the storage of PCB waste, rather than for actual transport activities.

- Storage areas for PCB waste at transfer facilities are subject to the storage facility standards of §761.65, but such storage areas are exempt from the approval requirements of §761.65(d) and the recordkeeping requirements of §761.180, unless the same PCB waste is stored there for a period of more than 10 consecutive days between destinations.
- 43. <u>Transporter of PCB waste</u> means, for the purposes of subpart K of 40 CFR Part 761, any person engaged in the transportation of regulated PCB waste by air, rail, highway, or water for purposes other than consolidation by a generator.
- 44. <u>Transport vehicle</u> means a motor vehicle or rail car used for the transportation of cargo by any mode. Each cargo-carrying body (e.g., trailer, railroad freight car) is a separate transport vehicle.
- 45. TSCA means the Toxic Substances Control Act (15 U.S.C. 2601 et seq.).

1.13 SUBMITTALS

- A. The following documents shall be submitted immediately upon project award to the Consultant prior to commencement of PCB Removal work:
 - 1. Site Specific Health and Safety Plan (HASP): The Remediation Contractor shall prepare a site specific HASP plan for protection of workers and control of the work site in accordance with OSHA regulatory requirements. The HASP shall govern all work conducted at the site during the abatement of PCB Containing Materials and related debris; waste handling, sampling, waste management; and waste transportation. At a minimum, the HASP shall address the requirements set forth in 29 CFR 1910.120, as further outlined below:
 - a. Health and Safety Organization
 - Site Description and Hazard Assessment
 - c. Training
 - d. Medical Surveillance
 - e. Work Areas
 - f. Personal Protective Equipment
 - g. Personal Hygiene and Decontamination
 - h. Standard Operating Procedures and Engineering Controls
 - Emergency Equipment and First Aid Provisions
 - j. Equipment Decontamination
 - k. Air Monitoring
 - Telephone List
 - m. Emergency Response and Evacuation Procedures and Routes
 - n. Site Control
 - Permit-Required Confined Space Procedures
 - p. Spill prevention and Containment Plan
 - q. Heat and Cold Stress
 - r. Record Keeping
 - s. Community Protection Plan
 - 2. <u>Training Documentation</u>: Documentation of OSHA 40-Hour HAZWOPER Training for all employees and subcontractors to be used

- for the abatement work, and 8-Hour HAZWOPER Supervisor Training for the designated on-site Health and Safety Officer for the abatement work.
- PCB and or other Toxic or Hazardous Substances Disposal Plan: A
 written plan that details the Remediation Contractor's plan for
 transportation and disposal of PCB-containing or other Toxic or
 Hazardous Substance_wastes generated during the project. The Disposal
 Plan shall identify:
 - a. Waste packaging, labeling, placarding and manifesting procedures.
 - b. The name, address and 24-hour contact number for the proposed treatment or disposal facility or facilities to which waste generated during the project will be transported.
 - c. The name, address, contact person(s) and state-specific permit numbers for proposed waste transporters, and EPA identification number for firms that will transport waste.
 - d. The license plate numbers of vehicles to be used in transporting of the waste from the site to the disposal facility.
 - e. The route(s) by which the waste will be transported to the designated disposal facility, and states or territories through which the waste will pass.
- 4. <u>Material Safely Data Sheets</u>: Material Safety Data Sheets (OSHA Form 174 or equivalent) and manufacturer's information shall be provided for all chemicals and materials to be used during the project including but not limited to specialty cleaners and chemical stripping products.
- B. The following documents shall be submitted to the Consultant within fifteen (15) work days following removal of waste from the site:
 - 1 Waste Profile Sheets
 - 2. Pre-Disposal Analysis Test Results (If required by disposal facility)
 - 3. Manifests signed by the disposal facility
 - 4. Tipping Receipts provided by the disposal facility
 - Certification of Final Treatment/Disposal signed by the responsible disposal facility official.
- C. PCB Work Closeout Submittals:
 - <u>Disposal Site Receipts</u>: Copy of waste shipment record and disposal site receipt showing the PCB-containing or other Toxic or Hazardous Substances materials have been properly disposed.
- Product Data: Catalog sheets, specifications, and application instructions for any removal products, if used.

1.14 POSTING AND RECORD MAINTENANCE REQUIREMENTS

- A. The following items shall be conspicuously displayed proximate but outside of abatement work areas. All signage must reviewed and approved by the Owner prior to posting.
 - 1. Exit Routes Emergency exit procedures and routes
 - 2. Emergency Phone Numbers A list indicating the telephone numbers and locations of the local hospital(s); the local emergency squad; the local fire department; the local police department; the Poison Control Center; Chemical Emergency Advise (CHEMTREC); the local Department of Health's local office; the Remediation Contractor (onsite and after hours numbers); and the environmental consultant (on-site and after hours numbers).
 - 3. Warning Signs Warning signs shall be in English and the language of any workers onsite who do not speak English, and be of sufficient size to be clearly legible and display the following or similar language in accordance with 29 CFR 1910.1200:

WARNING HAZARDOUS WASTE WORK AREA PCBs-POISON NO SMOKING, EATING OR DRINKING AUTHORIZED PERSONNEL ONLY PROTECTIVE CLOTHING IS REQUIRED IN THIS AREA

In addition, all entrances to work areas shall be posted with a PCB M_{L} marker.

- B. The Remediation Contractor shall maintain the following items on-site and available for review by all employees and authorized visitors:
 - 1. Remediation Contractor's Project Specific Health and Safety Plan
 - 2. Certificates of Training for all employees and the project Supervisor
 - 3. Codes, Standards and Publications
 - Material Safety Data Sheets (MSDS) for all chemicals used during the project.
 - 5. Copies of the Remediation Contractor's written hazard communication, respiratory protection, and confined space entry programs.
- C. <u>Fees, Permits and Licenses</u>. The Remediation Contractor shall pay all licensing fees, royalties, and other costs necessary for the use of any copyrighted or patented product, design, invention, or processing in the performance of the work specified in this Section.
 - 1. The Remediation Contractor shall be solely responsible for costs, damages, or losses resulting from any infringement of these patent rights or copyrights. The Remediation Contractor shall hold the Owner and the Owner's Authorized Representatives harmless from any costs, damages, and losses resulting from any infringement of these patent rights or copyrights.
 - 2. The Remediation Contractor shall be responsible for securing all necessary permits for work under this Section, including hauling, removal, and disposal, fire, and materials usage, or any other permits required to perform the specified work.

1.15 QUALITY ASSURANCE

- A. The Remediation Contractor shall provide and assure that the quality of work practices and procedures to be utilized are consistent with the above listed agencies and regulations. Remediation Contractor shall utilize the latest edition, including all addenda, revisions and supplements for all regulatory agencies codes, etc.
- B. Worker's Qualifications: The persons performing PCB Caulking abatement and their supervisors shall be personally experienced in PCB abatement work and shall have been regularly employed by a company performing hazardous materials abatement for a minimum of 3 years.

- C. <u>Pre-Work Conference</u>: Before the Work of this Section is scheduled to commence, a conference will be held by the Owner at the Site for the purpose of reviewing the Contract Documents, discussing requirements for the Work, and reviewing the Work procedures.
 - The conference shall be attended by the Remediation Contractor, and the Owner's Authorized Representatives employed by the Owner.

1.16 REQUIREMENTS FOR WORKER HEALTH AND SAFETY

- A. The Remediation Contractor is responsible and liable for the health and safety of all onsite personnel and the offsite community affected by the project. All onsite workers or other persons entering the abatement work areas, decontamination areas or waste handling and staging areas shall be knowledgeable of and comply with the requirements of the site specific Health and Safety Plan (HASP) at all times. The Remediation Contractor's HASP shall comply with all applicable federal, state and local regulations protecting human health and the environment from the hazards posed by the work to be performed under this project.
- B. Consistent disregard for the provisions of the HASP shall be deemed as sufficient cause for immediate stoppage of work and termination of the Contract or any Sub Contracts without compromise or prejudice to the rights of the Owner or the Owner's Authorized Representatives.
- C. Any discrepancies between the Remediation Contractor's HASP and these specifications or federal and state regulations shall be resolved in favor of the more stringent requirements that provide the highest degree of protection to the project personnel and the surrounding community and environment
- D. In addition to exposure concerns relating to the presence of PCB's, other health and safety considerations will apply to the work. The Remediation Contractor shall be responsible for recognizing such hazards and shall be responsible for the health and safety of Remediation Contractor employees at all times. It is the Remediation Contractor's responsibility to comply with all applicable health and safety regulations.
- E. The HASP shall be reviewed by all persons prior to entry into the abatement, decontamination, or waste staging areas, whether a representative of the Remediation Contractor, owner, architect/engineer, environmental consultant, subcontractor(s), waste transporter or federal, state or local regulatory agency. Such review shall be acknowledged and documented by the Remediation Contractor's Health and Safety Officer by obtaining the name, signature and affiliation of all persons reviewing the HASP.
- F. The HASP shall be maintained so as to be readily accessible and reviewable by all site personnel throughout the duration of the abatement project and until all

- waste materials are removed from the site and disposed of at the appropriate disposal facility.
- G. The Remediation Contractor's on-site Health and Safety Officer shall be responsible for ensuring that project personnel and site visitors are informed of and comply with the provisions of the HASP at all times during the project.

1.17 WORK AREAS AND ZONES

- A. The Remediation Contractor shall lay-out and clearly identify work areas in the field. Access by equipment, site personnel, and the public to the work areas shall be limited as follows:
 - Abatement Zone: The Abatement Zone(s) shall consist of all interior areas where removal of PCBs and other Toxic or Hazardous Substances and waste handling and staging activities are on-going and the immediately surrounding locale or other areas where contamination could occur. Each Abatement Zone for purposes of interior removal of PCB materials or other Toxic or Hazardous Substances for disposal shall be performed within a containment (refer to section 3.01) to isolate work areas from nonwork areas. The containment shall be visibly delineated with appropriate warning signs at all approaches to Abatement (including a PCB M₁ marker), and be restricted from access by all persons except those directly necessary for the completion of the respective abatement tasks. The Abatement Zones shall be relocated and delineated as necessary as work progresses from one portion of the project site to another, to limit access to each abatement area and to minimize risk of exposure to site workers and the general public. Access shall be controlled at the periphery of the Abatement Zones to regulate the flow of personnel and equipment into and out of each zone and to help verify that proper procedures for entering and exiting are followed. All persons within the Abatement Zones shall wear the appropriate level of protection established in the HASP.
 - 2. Decontamination Zone: The Decontamination Zone is the transition zone between the abatement area and the clean support zone of the project site, and is intended to reduce the potential for contaminants from being dispersed from the Abatement Zone to clean areas of the site. The Decontamination Zone shall consist of a buffer area surrounding each Abatement Zone through which the transfer of equipment, materials, personnel and containerized waste products will occur and in which decontamination of equipment, personnel, and clothing will occur. The Decontamination Zones shall be constructed as a three chamber decontamination unit for workers and a two chamber equipment room for waste load out as detailed in Section 3.02. All emergency response and first aid equipment shall be readily maintained in these Zones. All protective equipment and clothing shall be removed or decontaminated in the Decontamination Zone prior to exiting to the Support Zone.

3. Support Zone: The Support Zone will consist of the area outside the Decontamination Zones and the remainder of the project site. Administrative and other support functions and any activities that by nature need not be conducted in the Abatement or Decontamination Zone related to the project shall occur in the Support Zone, Access to the Abatement and Decontamination Zones shall be controlled by the Health and Safety Officer and limited to those persons necessary to complete the abatement work and which have reviewed and signed the HASP.

1.18 PERSONNEL PROTECTIVE EQUIPMENT

- A. The Remediation Contractor shall be responsible to determine and provide the appropriate level of personal protective equipment in accordance with applicable regulations and standards necessary to protect the Remediation Contractor's employees from all hazards present.
- B. The Remediation Contractor shall provide all employees with the appropriate safety equipment and protective clothing to ensure an appropriate level of protection for each task, taking into consideration the chemical, physical, ergonomic and biological hazards posed by the site and work activities.
- C. The Remediation Contractor shall establish in the HASP criteria for the selection and use of personal protective equipment (PPE).
- D. The PPE to be utilized for the project shall be selected based upon the potential hazards associated with the project site and the work to be performed. Appropriate protective clothing shall be worn at all times within the Abatement Zone.
- E. The Remediation Contractor shall provide the appropriate level of respiratory protection to all field personnel engaged in activities where respiratory hazards exist or there is a potential for such hazard to exit.
- F. The Remediation Contractor shall provide, as necessary, protective coveralls, disposable gloves and other protective clothing for all personnel that will be actively involved in abatement activities or waste handling activities or otherwise present in the Abatement Zones. Coveralls shall be of Tyvek® or equivalent material. Should the potential for exposure to liquids exist, splash resistant disposable suits shall be provided and utilized.
- G. Protective coveralls, and other protective clothing shall be donned and removed within the Decontamination Zone and shall be disposed of at the end of each day. Ripped coveralls shall be immediately replaced after appropriate decontamination has been completed to the satisfaction of the Health and Safety Officer. Protective clothing shall not be worn outside of the Decontamination Zone.

- H. Hard Hats, protective eyewear, rubber boots and or other non-skid footwear shall be provided by the Remediation Contractor as required for workers and authorized visitors.
- All contaminated protective clothing, respirator cartridges and disposable protective items shall be placed into proper containers to be provided by the Remediation Contractor for transport and proper disposal n accordance with 40 CFR 262.

1.19 EMERGENCY EQUIPMENT AND FIRST AID REQUIREMENTS

- A. The Remediation Contractor shall provide and maintain at the site, at a minimum, the following Emergency and First Aid Equipment:
 - 1. <u>Fire Extinguishers</u>: A minimum one (1) fire extinguisher shall be supplied and maintained at the site by the Remediation Contractor throughout the duration of the project. Each extinguisher shall be a minimum of a 20 pound Class ABC dry fire extinguisher with Underwriters Laboratory approval per 29 CFR 1910.157.
 - 2. First Aid Kit: A minimum 01 one (1) first aid kit meeting the requirements of 29 CFR 1910,151 shall be supplied and maintained at the site by the Remediation Contractor throughout the duration of the project.
 - 3. <u>Communications</u>: Telephone communications (either cellular or land line) shall be provided by the Remediation Contractor for use by site personnel at all times during the project.
- B. The Health and Safely Officer shall be notified immediately in the event of personal injury, potential exposure to contaminants, or other emergency. The Health and Safety Officer shall then immediately notify the Consultant.

1.20 STANDARD SAFETY AND HEALTH PROCEDURES AND ENGINEERING CONTROLS

- A. The following provisions shall be employed to promote overall safety, personnel hygiene and personnel decontamination:
 - 1. Each Remediation Contractor or Subcontractor shall ensure that all safety equipment and protective clothing to be utilized by its personnel is maintained in a clean and readily accessible manner at the site.
 - All prescription eyeglasses in use on this project shall be safety glasses conforming to ANSI Standard Z87.1. No contact lenses shall be allowed on the site.
 - 3. Prior to exiting the delineated Decontamination Zone(s), all personnel shall remove protective clothing, and place disposable items in appropriate disposal containers to be dedicated to that purpose. Following removal of PPE, personnel shall thoroughly wash and rinse their face, hands, arms and other exposed areas with soap and tap water wash and subsequent tap

- water rinse. A fresh supply of tap water shall be provided at the site on each work day by the Remediation Contractor for this purpose.
- All PPE used on site shall be decontaminated or disposed of at the end of each work day. Discarded PPE shall be placed in sealed DOT approved 55-gallon drums for off-site disposal.
- Respirators, if necessary due to an upgrade to Level C PPE, shall be dedicated to each employee, and not interchanged between workers without cleaning and sanitizing.
- 6. Eating, drinking, chewing gum or tobacco, smoking, and any other practice that increases the likelihood of hand to mouth contact shall be prohibited within the delineated abatement and decontamination work zones. Prior to performing these activities, each employee shall thoroughly cleanse their face, hands, arms and other exposed areas.
- All personnel shall thoroughly cleanse their face hands, arms and other exposed areas prior to using toilet facilities.
- 8. No alcohol, tobacco, illicit drugs or firearms will be allowed on the site at any time.
- Contact with potentially contaminated surfaces should be avoided, if
 possible. Field personnel should minimize walking through standing
 water/puddles, mud or other wet or discolored surfaces; kneeling on
 ground; and placing equipment, materials or food on ground or other
 potentially contaminated surface.
- 10. The use of the "Buddy System" shall be employed at all times while conducting work at the site. Each employee shall frequently monitor other workers for signs of heat stress or chemical exposure or fatigue: periodically examine others PPE for signs of wear or damage; routinely communicate with others; and notify the Health and Safety Officer in the case of an emergency.
- B. Worker's must wear protective suits, protective gloves, eye protection and a minimum of half-face respirator with HEPA filter cartridge for all projects. Respiratory protection shall be in accordance with OSHA regulation 1910.134 and ANSI Z88.2.
- C. Workers must be trained as per OSHA and USEPA requirements, have medical clearance and must have recently received pulmonary function test (PFT) and respirator fit tested by a trained professional.
 - 1. A personal air sampling program shall be in place as required by OSHA.
 - The use of respirators must also follow a complete respiratory protection program as specified by OSHA.

1.21 UNIT PRICING

- A. A unit price is an amount proposed by the Contractor and stated on the proposal as a price per unit of measurement for materials or services that will be added to or deducted from the Contract Sum by Change Order in the event the project Scope of Work is altered.
- B. Unit prices include material, any direct or indirect expenses of the Contractor or Sub-Contractor, profit, insurance, bonding, and any applicable taxes. The same unit price shall apply whether the work is added or deducted.
- C. The Contractor shall provide unit pricing on the attached rate sheet.

2 PART 2 – PRODUCTS

2.1 ABATEMENT PRODUCTS

- A. All materials shall be delivered in the original packages, containers, or bundles bearing the name of the manufacturer and the brand name.
- B. <u>Disposal Drums</u>: Metal or fiberboard with locking ring tops, with warning labels as required by OSHA, and/or EPA.

C. Respirators:

1. Type: Approved by the Mine Safety and Health Administration (MSHA), Department of Labor, or the National Institute for Occupational Safety and Health (NIOSH), Department of Health and Human Services.

D. Vacuum Cleaners:

1. Type: Vacuums equipped with HEPA filters.

E. Polyethylene Sheeting:

- Type: Minimum 6 mil., opaque, fire retardant polyethylene sheets.
- Floor Protective Layer: Minimum 10 mil., reinforced polyethylene sheets.
- F. <u>Cleaning Products:</u> Remediation Contractor shall at their discretion utilize specialty cleaning products such as <u>Capsur</u>, <u>TechXtract</u> or other cleaners for use in decontaminating porous and non-porous surfaces to remain. All such products shall be utilized in accordance with manufacturer's specifications as intended. Remediation Contractor shall ensure appropriate use and disposal associated with use in accordance with the MSDS sheets for each product utilized. It shall be incumbent upon the Remediation Contractor to determine the need for use of specialty products to meet required cleaning verification levels established herein and in accordance with the Work Plan.

2.2 GENERAL EQUIPMENT

- A. A sufficient supply of disposable mops, rags, and sponges for work area cleaning and decontamination shall be available.
- B. A sufficient supply of scaffolding, ladders, lifts, and hand tools (e.g., scrapers, wire cutters, brushes, utility knives, wire saws, etc.) shall be provided as needed.

2.3 PERSONNEL PROTECTION

- A. Safety equipment (e.g., hard hats meeting the requirements of ANSI Standard Z89.1-1981, eye protection meeting the requirements of ANSI Standard Z87.1-1979, safety shoes meeting the requirements of ANSI Standard Z41.1-1967, disposable PVC gloves or other work gloves), shall be provided to all workers and authorized visitors.
- B. Non-skid footwear shall be provided to all abatement workers. Disposable clothing shall be adequately sealed to the footwear to prevent body contamination.

3 PART 3 - EXECUTION

3.1 WORK AREA PROTECTION – ABATEMENT ZONE

- A. <u>Protection of Existing Construction</u>: Perform PCB Bulk Product Waste and Bulk PCB Remediation Waste removal work without damage or contamination of adjacent areas, soil and existing construction.
- B. Prior to commencement of PCB abatement activities at each work area, a containment system shall be constructed by the Remediation Contractor to capture and contain all materials removed during the abatement. Containment procedures referenced for the abatement zone must be utilized for both PCB Bulk Product Waste removal as well as Bulk PCB Remediation Waste Removal. Exception is work involving the removal of PCB contaminated soil for disposal as Bulk PCB Remediation Waste.
- C. Prior to any soil removal work, the boundaries of the excavation area shall be marked, properly secured, and a permit number provided by "Call Before You Dig" shall be obtained. Soil shall be maintained wet during removal to ensure no visible emissions or dust during removal.
- D. During all remediation activities, Remediation Contractor shall maintain control of all entrances and exits to the project site to ensure only authorized personnel enter the work areas and are afforded proper personal protective equipment and as required respiratory protection. All approaches to work areas shall be demarcated with appropriately worded warning signs.
- E. Work zones shall be established in accordance with this section to include abatement zone, decontamination zone and support zone.
- F. Ground protection to prevent debris from escaping the abatement zone and to protect areas outside of abatement zone from PCB contamination shall be utilized. Protection shall include the use of water impervious membrane covering which shall be secured to the ground surface. Edges shall be raised to prevent water run-off used for dust control during channel cutting and demolition of structures. The membrane shall be covered with a single layer of 6-mil polyethylene sheeting securely fastened to foundation.
 - One layer of polyethylene sheeting having a minimum thickness of 6-mils shall be installed on the exterior side of the structure beneath and extending a minimum of ten (10) feet beyond each window, door or control joint in each direction. The polyethylene sheeting shall be securely fastened to the outside face of the structure using duct tape or other suitable material.
- G. Isolation barriers shall be installed on interior side of window and door systems to isolate these systems to the building exterior where work shall be performed.

Protection shall include two layers of 6-mil polyethylene sheeting securely affixed to the inside finish surfaces of walls to isolate window or door systems to the building exterior.

- 1. Two (2) layers of 6-mil polyethylene sheeting shall be securely affixed to the inside of each window and/or door system with duct tape or other means to isolate the window and/or door systems to the building exterior.
- H. Isolation barriers shall be installed on exterior side of window and door systems to contain these systems where work shall be performed to minimize dispersal of dust and debris. Protection shall include two layers of 6-mil polyethylene sheeting securely affixed to the exterior side finish surfaces to contain window or door systems. To minimize dust and debris Remediation Contractor shall utilize negative pressure containment with use of negative air filtration units with HEPA filtration.
- I. All other openings to the building interior such as unit ventilation, ducts, and grilles shall be securely sealed with a single layer of 6-mil polyethylene sheeting from the building exterior. Unit ventilation, ducts and grilles on adjacent buildings which could be affected by emissions from the work area will also be sealed with a single 6-mil polyethylene sheeting.
- J. Negative Pressure: Air is to be drawn into the exterior enclosure under all anticipated conditions and exhausted through a HEPA filter during daily operations when dust generating methods for removing Bulk PCB Remediation Work such as cutting of masonry for the duration of the activity and for a period of not less than 1 hour after. The design parameters for static pressure differentials between the inside and outside of enclosures shall be in a range from 0.02 to 0.10 inches of water gauge, depending on conditions. All zones inside the enclosure must have less pressure than the ambient pressure outside of the enclosure (-0.02 inches water gauge differential).
- K. Ground protection and isolation barriers shall remain in place throughout work to collect dust and debris resulting from PCB Bulk Waste removal and PCB Remediation Waste removal. All debris generated during operations including but not limited to visible caulking, dust and debris shall be HEPA vacuumed continuously throughout the work shift and at the end of a work shift to avoid accumulation. Any tears or rips that occur in protections shall be repaired or removed and replaced with new protections.
- L. <u>Warning Signage</u>: Post warning signs in accordance with 29 CFR 1910.1200 at all approaches to the work area. Signs shall be conspicuously posted to permit a person to read signs and take precautionary measures to avoid exposure to PCBs or other Toxic or Hazardous Substances. These signs should include the PCB M_L markers at each entrance to the work area.
- M. <u>Waste Containers for PCB Bulk Product Waste</u>: Appropriate PCB waste containers shall be placed adjacent to abatement zones. Containers shall be

lined covered and secured. The PCB waste containers shall be properly marked as described in 40 CFR part 761.45. Marking shall include a PCB $\rm M_L$ marker.

3.2 DECONTAMINATION ZONE

- A. The Remediation Contractor shall establish contiguous to the work area, a decontamination enclosure consisting of equipment room, shower room, and clean room in series. The only access between contaminated and uncontaminated areas shall be through this decontamination enclosure. The Remediation Contractor shall ensure that employees enter and exit the Abatement Zone through the decontamination area.
- B. Access between rooms in the decontamination system shall be through double flap curtain opening airlocks.
- C. Construct the decontamination systems with wood or metal framing, 3/8" sheathing and cover both sides with a double layer of six (6) mil polyethylene sheeting, spray glued or taped at the joints. Caulk joints watertight at floor, walls, and ceiling.
- D. The Remediation Contractor shall visually inspect barrier several times daily to assure effective seal and the Remediation Contractor shall repair defects immediately.
- E. <u>Equipment room</u>: The equipment room shall be supplied with impermeable, labeled bags and containers for the containment and disposal of contaminated protective equipment.
- F. Shower area: Shower facilities shall be provided which comply with 29 CFR 1910.141(d)(3). The showers shall be adjacent both to the equipment room and the clean room.
- G. <u>Clean change room</u>: The clean room shall be equipped with a locker or appropriate storage container for each worker's use. Following showering, each worker must then change into street clothing in clean change areas.
- H. <u>Decontamination area entry procedures</u>: The Remediation Contractor shall ensure that all workers follow proper decontamination procedures for entry into a Regulated Work area including but not limited to the following:
 - Enter the decontamination area through the clean room.
 - Remove and deposit street clothing within a locker provided for their use.
 - Don protective clothing and respiratory protection before leaving the clean room.
 - Before entering the Abatement Zone, the Remediation Contractor shall ensure that workers pass through the equipment room.

- I. <u>Decontamination area exit procedures:</u> The Remediation Contractor shall ensure that all workers follow proper decontamination procedures for exit from a Regulated Work area including but not limited to the following:
 - Before leaving the regulated area, workers shall remove all gross contamination and debris from their protective clothing.
 - Workers shall remove their protective clothing in the equipment room and deposit the clothing in labeled impermeable bags or containers.
 - 3. Workers shall not remove their respirators in the equipment room.
 - Workers shall shower prior to entering the clean room.
 - After showering, workers shall enter the clean room before changing into street clothes.
- J. Equipment Room for Waste Removal: The Remediation Contractor shall establish a two chamber equipment room or area that is adjacent to the Abatement Zone for the decontamination of waste containers and equipment as noted above.
 - 1. The area must be of sufficient size as to accommodate cleaning of equipment and removing waste without spreading contamination beyond the area (as determined by visible accumulations).
 - All equipment and surfaces of containers filled with PCB waste must be cleaned prior to removing them from the equipment room or area.

3.3 PCB BULK PRODUCT WASTE MATERIAL

Refer to Table 1 for listing of PCB Bulk Product Waste Materials and Figures 1, and 2 for PCB Bulk Product locations.

- A. PCB Bulk Product Waste Materials including PCB window, door and building expansion joint caulking and window glazing and associated Bulk PCB Remediation Waste associated with metal non-porous window systems to be removed intact shall be handled and removed from specified locations for proper disposal.
- B. Materials shall be removed in a manner which does not breakdown the materials into fine dust or powder to the extent feasible. Equipment and tools to be utilized shall include hand tools and mechanical equipment such as demolition hammers to remove materials from adjacent substrates. Mechanical removal equipment shall as appropriate be fitted with dust collection systems.
- C. Any dry or brittle caulking materials or other PCB Bulk Product waste shall be removed with additional engineering controls such as use of a HEPA vacuum to remove accumulated dust or debris during removal.
- D. Sequence of removal shall follow the following general requirements:
 - Window systems with PCB containing glazing compound shall be removed in their entirety for disposal as Bulk PCB Remediation Waste (metal systems) and

PCB Bulk Product Waste (PCB containing glazing compound). This includes but is not limited to aluminum frames, glass, PCB glazing compounds, clips, anchors, panels, insulation, column covers on interior, steel lintels at locations where masonry opening is to be demolished and other materials as determined during demolition that are in contact with or contain PCB caulking or glazing compound.

- 2. PCB Caulking shall be removed from all interior and exterior joints at masonry openings and properly containerized for disposal as PCB Bulk Product Waste. Surfaces from which PCB caulking has been removed shall be cleaned with a PCB extracting agent (CAPSUR® or similar) and wire brush to remove all visible caulking prior to proceeding with removal of PCB Remediation Waste.
- Removal and off-site disposal of caulking associated with painted steel window lintels or painted steel door frames at designated locations.
- E. Waste shall be immediately containerized in temporary 6-mil polyethylene disposal bags for disposal. These containers shall be sealed in abatement zone when full during collection and then placed in disposal containers/storage trailers. The containers shall not be emptied into other containers to avoid dispersal of dust or fugitive emissions.
- F. The use of minimal but sufficient quantities of water to wet the generated dust prior to collection shall be utilized. Under no circumstances shall the PCB waste show evidence of free liquid water, pooling or ponding within the waste stream. Any liquid used to wet the dust and debris to control fugitive emissions shall be properly containerized and decontaminated in accordance with 40 CFR Part §761.79 (b)(1) or disposed of in accordance with40 CFR Part §761.60 (a).
- G. PCB Bulk Product Waste shall be stored for disposal in accordance with 40 CFR Part §761.40 and §761.65 and marked in accordance with 40 CFR Part §761.40 and §761.45. Waste generated includes both asbestos and PCB ≥50 mg/kg. The waste shall be containerized in accordance with requirements of asbestos abatement section 02080. Facility proposed for disposal shall be permitted to accept non-friable asbestos waste with PCB ≥50 mg/kg
- H. All waste containers shall be appropriately labeled in accordance with 40 CFR Part §761.40 and §761.45. Labeling shall include the PCB M_L marker.

TABLE 1 PCB BULK PRODUCT WASTE

Material	Location	Estimated Quantity
	Student Center	
	2 nd Floor Room 205, including Storage (Video Monitor/Closet)	5 @ 4' x 7'
Window Glazing (Interior and Exterior)	2 nd Floor Room 207	3 @ 4' x 7'
(interior and Exterior)	2 nd Floor Music Room	1 @ 7' x 25'
	Vending B	1 @ 7' x 11'
Interior Building Joint	1 st Floor Hallway North of 117 and North & West of 117B	90 LF
Caulking	2 nd Floor Room 205	45 LF
	2 nd Floor Room 207	30 LF
Exterior Bldg Joint Caulking	2 nd Floor North Wall at line T & 6 and line T & 8	30 LF
Interior Window Caulking	2 nd Floor Room 205, including Storage (Video Monitor/Closet)	110 LF
	2 nd Floor Room 207	66 LF
Exterior Window Caulking	2 nd Floor Room 205, including Storage (Video Monitor/Closet)	110 LF
	2 nd Floor Room 207	66 LF
	Alumni Hall	
Window Glazing (Interior and Exterior)	West, North & East	7 @ 6' x 15'
Interior Bldg Joint Caulking	West, North, South & East	360 LF
Exterior Bldg Joint Caulking	West, North & East	480 LF
Exterior Door Caulking	East & West	52 LF
Interior Window Caulking	West, North & East	344 LF
Exterior Window Caulking	West, North & East	344 LF

3.4 Bulk PCB REMEDIATION WASTE – POROUS SURFACES

Refer to Table 2 for listing of Bulk PCB Remediation Waste and Figures 1, 2 and 3 for drawings identifying locations of collected brick, concrete and wood remediation waste locations. See Figure 4 for locations of asphalt Bulk PCB Remediation Waste locations.

- A. Bulk PCB Remediation Waste Materials include adjacent surfaces such as porous brick and porous concrete block. Additionally, painted steel window lintels and painted steel door frames adjacent to PCB caulking shall be removed as Bulk PCB Remediation Waste ≥50 mg/kg. Window systems included in Section 3.3 shall also be removed for disposal as Bulk PCB Remediation Waste. Painted concrete block walls which will be demolished will also be handled and disposed of as Bulk PCB Remediation Waste ≥50 mg/kg. (Removal of substrates from walls to be demolished will not be necessary as the painted concrete block walls and brick veneer will be disposed of as Bulk PCB Remediation Waste ≥ 50 mg/kg) All other building materials, including, roofing caulk, window caulk, window glazing and door caulk, are products that were used in the original 1966 portion of the subject structure and meet the definition of "excluded products" as defined in 40 CFR part 761.3. According to Quinnipiac University, these products were manufactured in or prior to 1966 and installed during the original construction, and the PCB concentrations detected are not the result of dilution. These materials, which possess concentrations of PCB ≥ 1 mg/kg but less than 50 mg/kg, are regulated by the State of Connecticut and will be removed and disposed of as Bulk PCB Remediation Waste.
- B. The secondary waste resulting from removal of adjacent surfaces will be PCB contaminated dust and debris from cutting, and removal of surfaces which will be containerized and handled and disposed of as Bulk PCB Remediation Waste.
- C. Waste shall be immediately containerized in temporary 6-mil polyethylene disposal bags for disposal. These containers shall be sealed in abatement zone when full during collection and then placed in disposal containers/storage trailers. The containers shall not be emptied into other containers to avoid dispersal of dust or fugitive emissions.
- D. No dry sweeping, dusting or blowing shall be allowed. The use of minimal quantities of water to moisten the generated dust prior to collection shall be utilized. Under no circumstances shall the Bulk PCB Remediation Waste show evidence of free liquid water, pooling or ponding within the waste stream. Any liquid used to wet the dust and debris to control fugitive emissions shall be collected and decontaminated in accordance with 40 CFR Part §761.79 (b)(1) or disposed of in accordance with40 CFR Part §761.60 (a).
- E. All rags and other cleaning materials used to decontaminate and clean remaining surfaces shall also be properly disposed as Bulk PCB Remediation Waste in accordance with 40 CFR Part §761.61(a)(5)(v)(A) and as applicable 40 CFR Part §761.79.

- F. Sequence of removal shall follow the following general requirements:
 - Interior window sills including asbestos containing black composite sills and glazed block sills in contact with caulking shall be removed intact and disposed as Bulk PCB Remediation Waste.
 - 2. Steel window lintels to remain shall be stripped of all paint and surface ground smooth or sand blasted to meet Visual Standard No. 2, Near-White Blast Cleaned Surface Finish, of the National Association of Corrosion Engineers (NACE) due to the presence of rust, mill scale and porous paint on surface.
 - 3. Painted steel door frames shall be removed intact and disposed as Bulk PCB Remediation Waste.
 - 4. Testing has confirmed PCBs ≥1 mg/kg at a depth of at least 1 inch from caulking joint in adjacent porous masonry. Removal of porous brick, concrete block or glazed block for walls to remain in place shall be performed using mechanical tools equipped with dust controls as specified below:
 - a. For walls which will not be demolished, exterior porous brick veneer shall be removed at first full course of brick masonry joint in a straight vertically cut line from foundation to head at all vertical window jambs. For masonry window openings the vertical jamb from sill to steel lintel shall be cut and removed. All wood window sills will be removed as and disposed of as Bulk PCB Remediation Waste PCBs ≥50 mg/kg. For masonry door openings the vertical door jambs and lintel shall be removed. It is estimated that the distance from opening shall be approximately 8.0 inches. All removed material shall be disposed of as Bulk PCB Remediation Waste PCBs ≥50 mg/kg.
 - b. For walls that will not be demolished, interior porous painted concrete block and glazed block shall be removed in staggered pattern removing an entire ½ or whole block at mortar joint either from vertical masonry opening or at point where in contact with PCB caulking material. The method shall be utilized to facilitate repair of walls. Work shall be coordinated to ensure proper shoring and bracing of lintels above prior to performance of work. All removed material shall be disposed of as Bulk PCB Remediation Waste PCBs ≥50 mg/kg.
 - c. Asphalt present beneath window, door and building expansion caulk joints has been determined to contain PCB concentrations greater than 1 mg/kg. Asphalt shall be removed entirely from designated areas 2.0 ft. laterally and 2.0 ft. out from each caulk joint and only for proper disposal as waste containing PCBs ≥50 mg/kg.
 - Once materials have been removed and surfaces cleaned Owner's Consultant, shall be notified. Post testing verification sampling shall be performed once visually inspected to verify removal and cleaning.

- G. Waste shall be immediately containerized in temporary 6-mil polyethylene disposal bags for disposal. These containers shall be sealed in abatement zone when full during collection and then placed in disposal containers/storage trailers. The containers shall not be emptied into other containers to avoid dispersal of dust or fugitive emissions.
- H. The use of minimal quantities of water to moisten the generated dust prior to collection shall be utilized. Under no circumstances shall the PCB waste show evidence of free liquid water, pooling or ponding within the waste stream. Any liquid used to wet the dust and debris to control fugitive emissions shall be collected and decontaminated in accordance with 40 CFR Part §761.79 (b)(1).
- I. All rags and other cleaning materials used to clean shall also be properly disposed as Bulk PCB Remediation Waste. All Bulk PCB Remediation Waste shall be stored for disposal in accordance with 40 CFR Part §761.65. All waste containers shall be appropriately marked in accordance with 40 CFR Part §761.40 and §761.45.
- J. Bulk PCB Remediation Waste shall be stored for disposal in accordance with 40 CFR Part §761.65.
- K. All waste containers shall be appropriately marked in accordance with 40 CFR Part §761.40 and §761.45. Marking shall include the PCB M_L marker

TABLE 2 POROUS SURFACES BULK PCB REMEDIATION WASTE

Material	Location	Estimated Quantity
·	Student Center	
Brick Veneer Substrate	2 nd Floor East & West Exterior Windows	70 LF (1 course of brick)
CMU Substrate	2 nd Floor East & West Exterior Windows	70 LF (1 course of block)
Painted CMU and Exterior Brick Veneer	1 st Floor North Wall of Rooms, 117, 117B, 2 nd Floor North Wall of Rooms 205 (Inc. Storage), 207 (Inc. Storage), 2 nd Floor East Wall of Room 210	2,795 SF*
	2 nd Floor East Wall T Line to S Line of Room 207	115 SF*
	2 nd Floor Room 205 West Wall T line to Bathroom Wall	165 SF*
Painted CMU (Interior)	2 nd Floor Stair 51	75 SF
Interior Wood Window Sills	2 nd Floor Room 205 (Inc. Storage)	5 @ 10" x 4'
	2 nd Floor Room 207	3 @ 10" x 4'
	2 nd Floor Music Room	1 @ 10" x 25'
	2 nd Floor Vending B	1 @ 10" x 11'
	2 nd Floor Room 210	1 @ 10" x 4"
	Alumni Hall	
Painted CMU and Exterior Brick Veneer	North, East, South, West Walls	7,300 SF
Asphalt	North, East & West below Windows, Building Joints & Doors	290 SF

3.5 BULK PCB REMEDIATION WASTE – SOIL AND GRAVEL

Refer to Table 3 for listing of Soil and Gravel Bulk PCB Remediation Waste. Refer to Figure 4 for Soil and Gravel PCB Bulk Remediation Waste locations.

- A. All soils and gravel designated for removal shall be excavated and transported offsite for disposal as Bulk PCB Remediation Waste.
- B. Soil and Gravel removal shall be competed in accordance with 40 CFR Part §761.61 (a). The remediation goal is to remove PCB contaminated soils to meet clearance concentration of <1mg/kg.</p>
- C. Post removal verification sampling shall be conducted by Owner's Consultant, in all soil excavation areas to demonstrate that the cleanup goals have been met.
- D. All soils designated for removal shall be excavated and transported off-site for disposal as Bulk PCB Remediation Waste ≥50 mg/kg or within select locations.
- E. Asphalt present beneath window systems has been determined to contain PCB concentrations greater than 1 mg/kg. Asphalt shall be removed from designated areas only for proper disposal as waste containing PCBs ≥50 mg/kg.
- F. During excavation work, use of wetting to control dust and visible emissions shall be required. Remediation contractor shall ensure that upon completion of soil excavation adjacent masonry surfaces are cleaned of visible dust and soil deposits resulting from PCB contaminated soil removal.
- G. All PCB Remediation Waste shall be stored for disposal in accordance with 40 CFR Part §761.65.
- H. All waste containers shall be appropriately labeled in accordance with 40 CFR Part \$761.40 and \$761.45. Label shall include the PCB M_L marker.
- I. All equipment used during excavation shall be decontaminated as specified in Section 3.7.

TABLE 3 SOIL AND GRAVEL BULK PCB REMEDIATION WASTE

Material	Location	Estimated Quantity
Soil and Gravel Below Windows	North, East & West Walls Exteriors	100 SF (2' Deep)
Soil and Gravel Below Building Joints	North, East & West Walls Exteriors	190 SF (2' Deep)

3.6 CT REGULATED BUILDING MATERIAL WASTE REMOVAL – PCB <50 mg/kg

Refer to Table 4 for listing of CT Regulated PCB Containing Building Materials (<50 mg/kg) and Figure 5 for CT Regulated PCB Containing Building Materials (< 50 mg/kg) locations.

- A. Connecticut Regulated PCB Containing Building Materials include window and door caulking, roofing caulking, glazing and glue daubs, containing less than 50 mg/kg and are to be removed intact from specified locations for proper disposal.
- B. Materials shall be removed in a manner which does not breakdown the materials into fine dust or powder to the extent feasible. Equipment and tools to be utilized shall include hand tools and mechanical equipment such as demolition hammers to remove materials from adjacent substrates. Mechanical removal equipment shall as appropriate be fitted with dust collection systems.
- C. Any dry or brittle caulking materials or other materials waste containing PCB <50 mg/kg shall be removed with additional engineering controls such as use of a HEPA vacuum to remove accumulated dust or debris during removal.</p>
- D. Sequence of removal for caulk and glazing shall follow the following general requirements:
 - Remove existing caulking/glazing around metal window/door frame and roof caulk from around fixtures and flashing for disposal as PCB Remediation Waste <50 mg/kg.
 - 2. Clean surface of adjacent steel lintels and beams and roof surface to remove all visual caulking materials. Masonry surfaces from which PCB caulking has been removed shall be cleaned with a PCB extracting agent (CAPSUR® or similar) and wire brushed to remove all visible caulking.
- E. Waste shall be immediately containerized in 6-mil polyethylene disposal bags for disposal. Waste generated includes both asbestos and PCB <50 mg/kg. The waste shall be containerized in accordance with requirements of asbestos abatement section. Facility proposed for disposal shall be permitted to accept non-friable asbestos waste with PCB <50 mg/kg.</p>
- F. The use of minimal quantities of water to moisten the generated dust prior to collection shall be utilized. Under no circumstances shall the PCB waste show evidence of free liquid water, pooling or ponding within the waste stream. Any liquid used to wet the dust and debris to control fugitive emissions shall be properly containerized and decontaminated in accordance with 40 CFR Part §761.79 (b)(1) or disposed of in accordance with40 CFR Part §761.60 (a) and State of Connecticut Regulations.

TABLE 4 CONNECTICUT REGULATED PCB CONTAINING MATERIAL WASTE (<50 MG/KG)

*ROOFING CAULK DISTRIBUTED THROUGHOUT THE TARRED ROOF AREA ON FLASHING SEAMS AND FIXTURE PENTRATIONS.

Material	Location	Estimated Quantity
	Student Center	
Black Interior Window Glazing (For <50 mg/kg PCB)	Hallway West & North of 117 B	1 @ 24'x8'
	Room 205West Wall	1 @ 4'x6'
	Alumni Hall	
Interior Door Caulking	1 st Floor Hallway	52 LF
Roof Caulk	Alumni Hall Roof	350 LF*
Caulk Remnants	Alumni Hall North Entrance	10 LF

3.7 CLEANING AND DECONTAMINATION

- A. The Remediation Contractor shall be responsible for complete cleaning and decontamination of the Abatement Zone upon completion of work. The Abatement Zone will be required to meet proposed Verification Sampling limits established in the Work Plan.
- B. The Remediation Contractor shall utilize HEPA vacuum and wet cleaning products to remove all visible dust and debris from all surfaces within the work area. If specialty products are utilized the Remediation Contractor shall utilize in accordance with manufacturer's specifications including any additional safety and disposal requirements for such use.
- C. Cleaning of containment barriers shall be performed prior to removal leaving critical barriers at openings, decontamination units and negative air filtration devices in place until results of post verification sampling indicate acceptable limits. Cleaning shall be performed from ceiling to floors.
- D. Any liquid used to wet the dust and debris to control fugitive emissions shall be collected and decontaminated in accordance with 40 CFR Part §761.79 (b)(1) or disposed of in accordance with §761.60 (a).

- E. All rags and other cleaning materials used to clean shall also be properly disposed as PCB Remediation Waste. All PCB Remediation Waste shall be stored for disposal in accordance with 40 CFR Part §761.61(a)(5)(v)(A). All waste containers shall be appropriately marked in accordance with 40 CFR Part §761.40 and §761.45.
- F. Equipment to be utilized in connection with the removal of PCB Bulk Product Waste, Bulk PCB Remediation waste and PCB Contaminated soil including waste collection or that will or may come in direct contact with the site contaminants shall be decontaminated prior to leaving the site to prevent migration of the contaminated residues from the project site. Decontamination shall be in accordance with 40 CFR Part §761.79 and Subpart S procedures.
- G. All non-disposable equipment and tools employed in the course of the project will be decontaminated at the conclusion of each work day through the following sequence:
 - 1. Initial tap water rinse, to remove gross soil
 - 2. Tap water and hexane or equivalent wash
 - 3. Tap water rinse
 - 4. Second tap water and hexane or equivalent wash
 - 5. Second tap water rinse
- H. The wash water and decontamination liquids shall be captured and containerized in DOT approved 55-gallon drums for off-site disposal.

3.8 POST ABATEMENT AIR SAMPLING AND SURFACE WIPE SAMPLING

- A. The Owner has retained an industrial hygiene firm (Owner's Consultant, Facility Support Services, LLC) to perform periodic inspections and sampling during the work. Site visits shall be scheduled based on the progress of the work and at critical time periods.
- B. The Owner's Consultant shall perform real time monitoring for dust particulate following the requirements of the Air Monitoring Plan as detailed in Section 3.3 of the Self Implementing On-Site Clean-up and disposal Plan dated December 23, 2010. Air Monitoring shall include real-time monitoring for dust in air concentrations using Dust Trak or equivalent monitoring devices for total dust. Sampling shall be performed for background for comparison to during abatement sampling. In addition, air sampling outside of the Abatement Zone, may be performed periodically during active removal activities at the Owner's Consultant's discretion for laboratory confirmation. Air samples, if collected shall be collected using low-volume pumps for analysis using analysis method TO-4A. The number, location and frequency of samples shall be determined by the Owner's Consultant.
- C. It should be noted that if the results of air samples exceed established action levels or ambient background conditions for real time monitoring whichever is less the Remediation Contractor will be required to implement work stoppage to determine causes of exceeding results and as necessary utilize additional containment measures or engineering controls. Any resulting decontamination of areas beyond the Abatement Zone shall be responsibility of the Remediation Contractor.

- D. The Owner's Consultant shall perform post removal and decontamination visual clearance inspection and wipe sampling as necessary to determine complete removal of PCB's. Refer to the SIDP for requirements for determination of clearance levels.
- E. Once verification sampling has documented the Abatement Zone meets required criteria established in the SIDP, the Remediation Contractor shall be permitted to remove decontamination unit, negative air filtration devices and critical barriers. These areas shall be subjected to a visual inspection to ensure no visible dust is present.
- F. The Owner's Consultant shall also collect additional wipe samples outside of the abatement zone and will analyze these samples for PCBs. If PCBs are detected in these samples a cleaning process similar to that described above shall be implemented by the Remediation Contractor.

3.9 MARKING OF WASTE CONTAINERS

- A. All waste containers must be marked with the name of the waste contained; the date in which the first material was placed in the vessel; and the last date at which addition of waste occurred. All waste containers must be marked with a PCB M_L marker.
- B. All waste containers containing PCB Bulk Product Waste, Bulk PCB Remediation Waste and PCB contaminated debris, containment system components, used personnel protective equipment, personal and equipment wash water and decontamination fluids, or other wastes generated during the abatement work shall be labeled as follows:

DOT Class 9 UN3432 (solid) Or UN2315 (liquid) PCB Waste RQ Waste for Disposal

Federal law prohibits improper disposal.

If found, contact the nearest police or public safety authority or the U.S. Environmental Protection Agency.

a. Generator's Information:	
b. Manifest Tracking No.:	
c. Accumulation Start Date:	
d. EPA ID No.:	
e. EPA Waste No.:	
f. Total Weight:	
g. Container No.:	

HANDLE WITH CARE!

In addition, these containers must be marked with a PCB M_L marker.

C. Such marking must be durable, in English and printed on or affixed to the surface of the package or on a label, tag or sign; displayed on a background of sharply contrasting color; un-obscured by labels or attachments and located away from any other marking (such as advertising) that could substantially reduce its effectiveness.

3.10 ON-SITE WASTE MANAGEMENT AND DISPOSAL OF SOLID HAZARDOUS WASTES

- A. All solid waste material, containment system components, used personnel protective equipment, and other solid wastes generated during the work, shall be placed directly in appropriate waste receptacles immediately upon removal from its in-situ position. Suitable waste receptacles may consist of roll-off containers or DOT-approved 55-gallon drums.
- B. The Remediation Contractor shall be responsible for all packaging, labeling, transport, disposal and record-keeping associated with PCB or PCB contaminated waste in accordance with all federal, state and local regulations.
- C. The Remediation Contractor shall ensure that the person transporting the waste holds a valid permit issued in accordance with appropriate federal, state, and local regulations.
- D. The Remediation Contractor shall provide to the transporter at the time of transfer appropriate shipping records or uniform waste manifests as required by the federal, state and local regulations with a copy to the Owner and Owner's Consultant.
- E. Remediation Contractor shall maintain proper follow up procedures to assure that waste materials have been received by the designated waste site in a timely manner and in accordance with all federal, state and local regulations.
- F. The Remediation Contractor shall dispose of Bulk Product and Bulk PCB Remediation Waste ≥ 50 mg/kg at the Chemical Waste Management, Model City New York landfill an approved TSCA chemical waste landfill.
- G. If roll-off containers are to be utilized for containerization of the abatement wastes the following shall apply:
 - All roll-off containers or other similar vessels utilized shall be watertight and lined with 6-mil polyethylene sheeting or equivalent impermeable lining, and equipped with a secured and impermeable cover.
 - 2. The impermeable cover shall remain securely in place at all times when material is not being actively placed in the vessels. The Remediation Contractor shall be responsible for ensuring that the cover remains securely intact until the container is removed from the site.

- H. If 55-gallon drums are to be utilized for waste containerization, the drums shall consists of suitable DOT-approved 55-gallon drums that are watertight and free of corrosion, perforations, punctures, or other damage. All drums shall be securely covered and sealed at the conclusion of each work day.
- The waste containers shall remain staged at the site with a secure impermeable cover in place until the materials are transported from the site to be delivered to the designated disposal facility.
- J. A waste roll-off and drum staging area shall be designated prior to initiation of the abatement work, and approved by the General Contractor, Construction Manager and Owner's Consultant. If this area is located outside of the building, the area (or areas) shall be surrounded by a chain-link fence with a minimum height of six feet. The fence shall be labeled with a PCB M_L marker.
- K. Properly containerized waste with PCB ≥50 mg/kg must be transported by a licensed hauler and shipped as PCB Bulk Product Waste or Bulk PCB Remediation Waste for disposal at a permitted facility for PCB waste ≥50 mg/kg. Solids soil and debris (trash, lumber, rags, etc.) or any non-liquid waste contaminated by PCBs at a concentration ≥ 50 ppm will be disposed of at the Chemical Waste Management, Model City New York landfill, a TSCA chemical waste landfill.
 - Provide required copies of the uniform waste manifests for hazardous wastes to the Owner, waste generation State and waste destination State as required.
 - L. Materials containing <50 mg/kg that are excluded products will be transported to the Waste Management Turnkey Recycling and Environmental Enterprise, Rochester, New Hampshire municipal landfill, a landfill permitted to accept < 50 mg/kg PCB waste under State of New Hampshire permit No. DES-SW-95-001.
 - Waste manifests must show chain of custody. Provide required copies of the waste shipment records for wastes to the Owner's Consultant as required.
 - M. Any PCB Liquid Water Waste shall be properly containerized and decontaminated in accordance with 40 CFR Part §761.79 (b)(1) or disposed of in accordance with 40 CFR Part §761.60 (a).
 - N. Any chemicals, solvents or other products used during decontamination shall be properly containerized as PCB Liquid Waste. Waste must be properly decontaminated or disposed in accordance with 40 CFR Part §761.60 (a) or 40 CFR Part §761.79(g). Provide required copies of the uniform waste manifests for hazardous wastes to the Owner, waste generation State, and waste destination State as required.

Part §761.79(g). PCB Liquid Waste shall be transported by a licensed hauler and shipped for treatment or disposal. Provide required copies of the uniform waste manifests for hazardous wastes to the Owner, waste generation State, and waste destination State as required.

- O. All contaminated waste shall be carefully loaded on trucks or other appropriate vehicles for transport. Before and during transport, care shall be exercised to insure that no unauthorized persons have access to the material.
- P. Transporters of the waste are prohibited from "back hauling" any freight after the disposition of the Owner's waste stream until decontamination of the vehicle and/or trailer is assured.

END OF SECTION

FIGURES

